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AUTHOR Busha, Charles H.
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ABSTRACT

An employer needs assessment involving 469 businesses and firms in Anderson, Oconee, and Pickens counties was conducted during 1978-79 by Tri-County Technical College (TCTC) to: (1) involve the business community in establishing TCTC's educational priorities: (2) determine discrepancies between area training needs and TCTC's curriculum: and (3) collect opinions about TCTC. During the study, 369 on-site interviews were conducted and 100 surveys were mailed. Interviewees and respondents were asked to identify occupational areas where training was needed on an occupational inventory checklist and to indicate, among other items, their familiarity with TCTC, the frequency with which they hired TCTC graduates, the quality of job preparation provided by TCTC, and the performance of TCTC graduates. Selected findings indicate that 78% of the respondents were moderately or very familiar with TCTC and that only 13% had never hired a TCTC graduate. While most respondents rated graduate job performance as good to excellent, many indicated a need for TCTC and other vocational training centers to emphasize pride in workmanship and quality control. A variety of vocational areas needing additional training opportunities were cited. The study report summarizes survey methodology and findings and provides background information on the population and economy of the three counties. The survey instruments are included. (JP)

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EMPLOYMENT AND TRAINING NEEDS OF BUSINESS AND INDUSTRY:

Final Report of an Employer Needs Assessment Conducted in Anderson, Oconee, and Pickens Counties in South Carolina, 1978-1979

By Charles H. Busha, Ph.D.

Project Director

Employer Needs Assessment

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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July 1978

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In addition to the advice and assistance provided by the above persons, local businesses and industries also expressed considerable interest in the Employer Needs Assessment Project. The exemplary assistance of personnel officers and other representatives of numerous firms in Anderson, Oconee, and Pickens counties contributed to the successful completion of this business/industry survey.

ABSTRACT

This publication reports results of the Employer Needs Assessment, 1978-1979, which was conducted in three up-state South Carolina counties by research project staff at Tri-County Technical College, Pendleton, S. C. The project was funded through the Vocational Education Act of 1976 by the Research Coordinating Unit, Office of Vocational Education, South Carolina State Department of Education. A total of 469 businesses and firms in the industrial communities of Anderson, Oconee, and Pickens counties were surveyed concerning manpower needs of employers and training needs of employees. By means of survey research methods, 219 major industries in the 1978 South Carolina Industrial Directory were surveyed by means of on-site interviews conducted by a team of trained interviewers. In addition, more than 150 smaller firms (25 or less employees) were surveyed by means of on-site interviews. Remaining firms were surveyed by means of mail questionnaires.

The Employer Needs Assessment focused upon jobs that require education that is (1) beyond that normally provided on the job, (2) comparable to that provided by two-year technical colleges, and (3) of less than a baccalaureate degree. More than 125 of occupational categories fell within the group of targeted jobs, many of which require training of the type offered by two-year technical colleges and vocational education centers in local public school districts.

Among other reasons, the Employer Needs Assessment was conducted in an attempt (1) to obtain more direct involvement of the business/industrial community of the tri-county area in establishing educational priorities of Tri-County TEC and area vocational education centers; (2) to determine discrepancies between educational needs of local business and industrial community and the services/programs of the area that are presumably addressed to those needs; and (3) to collect opinions and attitudes toward TEC and vocational education that may be of value in attempts to modify and strengthen occupational and educational programs.

Questionnaire and interview data from cooperating respondents were supplemented with information concerning the population, educational attainments, and economic conditions of the tri-county area. These supplementary data were gleaned from appropriate local, state, regional and national sources, many of which were published reports that contain statistics relevant to various characteristics of Anderson, Oconee, and Pickens counties.

Among the findings of the Employer Needs Assessment were the following: (1) the service area does not have a critical general manpower shortage; (2) more than half of the area's employees work in manufacturing, particularly in the textile and apparel industries; (3) manufacturing will continue to be the primary source of the area's income, although service jobs and white-collar jobs are steadily increasing; (4) the growth of the population and the labor force of the service area has exceeded national trends in recent years; (5) non-textile jobs will continue to increase in the three-counties, reflecting the expansion of a diversified economy; (6) as industries

and services expand in the tri-county area, more specialized and highly technical occupational training programs will be needed and more residents will be required to extend their formal education beyond that offered by high schools; (7) most area firms employ persons who were trained at Tri-County Technical College or at area vocational education centers, and most of these employees are well trained and have good to excellent work habits; (8) vocational and technical training enhances the employability and job advancement of area employees; (9) although Tri-County TEC and local vocational education centers have provided and continue to provide trained manpower for the area, certain areas of occupational curricula are in need of careful re-evaluation, modification; and improvement; and (10) many industries recognize the value of more cooperative education and would like TEC and vocational education centers to emphasize pride in workmanship and quality control.

Recommendations of the study included the following: (1) Increase efforts to devise more thorough and more uniform methods to evaluate the quality of instruction and the performance of instructors; (2) Develop a more viable and comprehensive counseling and guidance program for students; (3) Explore the feasibility of establishing a training program for computer operators and data processors. Many local industries currently recognize the need for personnel trained in these areas. It is apparent that the utilization of computers in many local firms is growing in all three counties; (4) Continual monitoring of the community is recommended. This is especially important at a time when Tri-County Technical College and area vocational education centers must respond to trends in enrollment and rapid growth, innovation, and development within the business and industrial community. These institutions should continue to evaluate, on a periodic basis, the extent to which their educational programs meet the needs of students and industry in the service area; (5) Whenever possible, additional programs of cooperative education should be established with local businesses and industries. These programs will eliminate the criticisms of some employers who felt that more on-the-job training would add depth to occupational preparation; (6) Increased emphasis should be placed on the maximum use of advisory committees for instructional programs; (7) Instructors should be given and should take advantage of additional opportunities to keep abreast of technological advances being reflected in area firms that employ Tri-County TEC and area vocational education center graduates. In this respect, faculty and staff members should be encouraged to take advantage of all opportunities--both formal and informal--to upgrade the level of their technological knowledge and skills, as well as to improve their knowledge of new methods and material for effective instruction; (8) The findings of the survey should be used extensively to improve individual instructional programs; defined weaknesses should be corrected as soon as economically feasible. Efforts should be made to improve instruction in the areas of radio/TV, secretarial science, supervisory training, real estate, and general education. Special attention should also be focused on the need for additional and more thoroughly trained personnel in the areas of automotive mechanics, auto body repair, electronics engineering technology, machine tool technology, welding, secretarial science, and management; (9) As the industrial structure of employment changes within the service area, Tri-County TEC and area vocational education centers should eliminate training programs directed toward declining occupational areas and strengthen those programs in which shortages of trained manpower

exist as a result of re-distributions among business and industrial occupations. For example, as the need in the service area for blue-collar craftsmen, operators, service workers, and laborers declines to the national level and as the need for white-collar personnel continues to rise within the local service area to that of the national average, additional emphasis should be placed at TEC upon the training of clerical, sales, para-professional, and managerial personnel; (10) Make additional efforts to recruit more women, minority, ethnic, and older students, placing emphasis on training for employment. Also, focus additional attention on career-oriented training for persons in the service area who have already obtained a liberal arts education but who cannot currently find work because of limited employment opportunities for persons without needed job skills; (11) It is highly recommended that Tri-County Technical College carefully review the plan devised by The State Board for Technical and Comprehensive Education entitled "Design for the 80's." This concept appears to offer some viable alternatives for training in high technologies--opportunities that cannot presently be offered at the local level because of fiscal and physical constraints; (12) Explore the possibility of conducting additional short-term, in-service upgrading programs, specialized refresher courses, workshops and institutes for personnel who are already employed in business and industry. From the results of the Employer Needs Assessment, it is apparent that many personnel officers in business and industry feel the need for various occupation-oriented upgrading courses conducted by TEC. A complete list or recommended subject areas for such training will be included in the final report of the project; (13) More emphasis should be placed at all levels of instruction on the problem of product and quality-control in industry; (14) Because of the increasing utilization of plastics and related materials and the recent development of plastics industries in the tri-county area, develop training programs for tool and die operators in the plastics field and for plastics injection molding.

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Chapter 1

INTRODUCTION

In the summer of 1978, Tri-County Technical College was awarded a research grant of $25,000 to conduct an Employer Needs Assessment in Anderson, Oconee, and Pickens counties. A project director and secretary were employed in July, 1978, and planning for the study was initiated with the appointment of an Employer Needs Assessment Advisory Committee. The eight selected members of the committee represented various backgrounds, and the project director, who was employed by the college especially to conduct the research, served as chairperson of the committee.

During the first three months of the project, plans were laid for the conduct of an extensive survey among all major industries of the tri-county area. In addition, the project director devoted a considerable amount of time during the initial phase of the research to the collection of background information about characteristics of the local population, the various educational levels among the people, and the economies of Anderson, Oconee, and Pickens counties. A training program for interviews and a recruiting plan to obtain these research assistants were also developed in anticipation of on-site interviews with representatives of business and industry. Meanwhile, the project secretary compiled a comprehensive list of local firms to be surveyed by means of interviews and questionnaires. The targeted businesses and industries were then listed on 3 x 5 cards, on which addresses and the number of employees in each firm were also indicated.

A search of ERIC documents pertaining to the conduct of business/industry surveys by educational institutions was also made. Relevant ERIC reports were obtained by the project director from the microfilm collection of the Clemson University library. The information gained from relevant documents in the ERIC collection provided insights, allowing the project director to make critical methodological decisions related to the conduct of the Employer Needs Assessment. A discussion of the methodology of the Employer Needs Assessment is detailed in this chapter.

Among the requirements of the project was the preparation of a manual about the conduct of employer needs assessments. A 62 page manual, entitled The Conduct of Needs Assessments Among Employers: A Manual of Techniques and Interpretations for Business/Industry Surveys, was written by the project director, Dr. Charles H. Busha, and printed at Tri-County Technical College. Copies of the "how-to-do-it" manual were distributed to all vocational education centers in the college's service area and to the fifteen other technical institutions and colleges in the State TEC system. Fifteen copies of the manual were also sent to the granting agency which sponsored the project--the Research Coordinating Unit, Office of Vocational Education, South Carolina State Department of Education.

METHODOLOGY OF THE NEEDS ASSESSMENT

After the overall purpose of the Employer Needs Assessment had been determined, the planning stage for the project began. In this stage, an attempt was made to identify the exact nature of the needed data, including the following: 1) the number of unfilled jobs in the service area and 2) whether the local supply of trained manpower was sufficient, inadequate, or surplus for many occupational categories. A decision was made to limit the targeted occupational categories to jobs that require education that is: 1) beyond that normally provided on the job, 2) comparable to that provided by two-year technical colleges, and 3) of less than a baccalaureate degree. Furthermore, the following information was needed: 1) the number of persons currently employed in occupational categories who do not have minimum certification or education needed for the job, 2) additional full-time personnel needed to provide optimum care for the present service level, 3) approximate number of personnel needed by July 1985 for anticipated service level, 4) the scope of work for the next five-year period for the job is expected to increase, remain constant, or decrease, and finally 5) whether TEC-trained personnel had ever been employed to fill jobs in selected firms within certain occupational categories. In addition to these data, information about many other facets of Tri-County Technical College's educational programs, were also sought, as well as the training outcome of Tri-County TEC-trained personnel.

While the collection of particular quantitative data was deemed to be of importance in the Employer Needs Assessment, many kinds of qualitative data were also sought, including the following:

- whether industrial representatives are familiar with the vocational and technical educational programs offered at Tri-County TEC,
- the frequency with which surveyed firms employ persons trained at Tri-County TEC,
- the reasons why firms had not employed persons trained at Tri-County TEC,
- information about the work habits of persons trained at Tri-County TEC,
- the overall level at which Tri-County TEC personnel had been prepared to perform required job skills,
- overall ratings of the occupational preparation of TEC-trained personnel,
- indicators of the overall job opportunities in industry for employees who received training at Tri-County TEC,
- whether TEC-training of persons had enhanced employment opportunities in relation to job placement and advancement,
- indicators of the primary source for the identifications and eventual employment of TEC-trained employees,
- information concerning emerging occupations in the foreseeable future,

- information about needed, additional training assistance to meet training requirements for personnel already employed in business and industry,
- evaluations of job performances of TEC-trained personnel employed in business and industry,
- indications of the overall technical and vocational skills and competencies needed by business and industry,
- the collection of comments about many facets of Tri-County Technical College, e.g., attitudes toward TEC, image of TEC, evaluations of TEC training programs, etc., and
- information about employment opportunities for women in business and industry in the service area, e.g., sex roles in industry.

Needs Assessment Advisory Committee

With the advice and assistance of the Needs Assessment Advisory Committee at Tri-County TEC, several questionnaires were prepared for the purpose of collecting the various kinds of needed research data. Members of the committee were: Dr. Charles H. Busha, Chairman and Project Director; Dr. Kent Sharples; Mr. Charles Gibson; Mr. Bill Hughes; Dr. Patricia Gill; Mr. Rufus Mitchell; Mr. Earle Rochester; and Mr. Ron Talley. The questionnaires were first prepared in draft form and each question was carefully reviewed by the advisory committee. The resulting preliminary questionnaire was then distributed to a small sample of industrial representatives so that the instruments could be pretested. Based upon an analysis of the returned preliminary questionnaires, a final draft was prepared of the questionnaires used in the survey.

The questionnaires were designed to collect information that would contribute to:

- the direct involvement of the business/industrial community in establishing the educational priorities of Tri-County TEC;
- the determination of discrepancies between educational needs of the community and TEC services/programs that are presumably addressed to those needs;
- the collection of opinions and attitudes toward TEC that may be of value in attempts to modify and strengthen goals and educational programs of the college;
- the establishment of direct, personal communication links among area employing organizations and TEC so that information about community needs and institutional capabilities can be exchanged;
- the determination of whether undertraining or overtraining of persons has occurred for various occupational categories within the three-county area;
- the determination of whether too many or too few trained personnel have been produced in selected occupations;

- the determination of whether actual demands for selected trained personnel for jobs in the three counties have been met; and
- the determination of whether inadequately or improperly prepared future employees have been trained at TEC.

Complete Enumeration Versus Sample

A decision was made by the project director not to select a sample but to accomplish as complete an enumeration of the population as possible. Because adequate funds were available for a fairly complete enumeration of all industries listed in the 1978 South Carolina Industrial Directory, the project director decided to collect as much information as possible from a maximum number of industries, within the time frame for the project.

In addition, a decision was made to select an ex post facto sample and then to compare sample data. By this process it could be determined whether a significant difference existed between the total data base and the sample data base. The decision to interview all large industries proved to be a major public relation success, insofar as Tri-County TEC is concerned. Many of the industrial representatives commented about being impressed because a representative from Tri-County TEC had taken the time to come to their plants to conduct face-to-face interviews.

Development of the Questionnaire

As questionnaire items were developed, an attempt was made to structure questions requiring fixed-alternative responses. For example, the question "How frequently does your company or firm hire personnel who were trained at Tri-County TEC?" was followed by these fixed-alternative responses: never, seldom, occasionally, often, very frequently, and don't know. The decision to make questionnaire items in the form of closed, rather than open-ended, questions was based on the assumption that busy industrial representatives would respond more readily to fixed items that range from the most positive to the most negative response--or otherwise represent the full spectrum of participants' responses/opinions/attitudes. Another major factor relating to the decision to prepare structured questionnaire items was the assumption that the data could be more readily categorized and analyzed in this fashion, rather than would be the case with open-ended questions. A copy of the questionnaire used in the Employer Needs Assessment is provided in the appendix of this report.

An Occupational Inventory Checklist was also prepared so that assessments could be made of the training and employment needs for various technical and vocational skills in the Anderson, Oconee, and Pickens counties. The checklist has also been provided in the appendix.

Use of Survey Research Procedures

Standard survey research procedures were used during the conduct of the Employer Needs Assessment Project. These procedures were based upon on-site interviews with representatives of major businesses and industries, supplemented by mail questionnaires to secondary firms. During the course of the

project, the following persons were selected to serve as interviewers: Shirley Sarlin, Harry Workman, Debbie Bond, Denise Blakeney, Susan Harvey, Leann Mullinax, Ron Leonard, Elaine Persall, and Phoebe Winter. After undergoing appropriate training, the interviewers were highly qualified research assistants; several of them were graduate students at Clemson University where they were studying industrial relations and management.

Among the criteria for selecting interviewers were the following:

- a current and valid driver's license and a dependable automobile,
- preferably a BA or BS degree, but at least a junior college degree,
- background in education or in an appropriate area of the social or behavioral sciences,
- experience in vocational or technical education (either as a teacher or administrator),
- friendly and personable disposition,
- appropriate dress and behavior,
- ability to work during the required hours,
- ability to follow directions,
- ability to record respondents' comments in an objective and accurate manner, and
- sound and practical judgment.

A training session for all interviewers was conducted by the project director and project secretary at Tri-County TEC. The purpose of the training session was to thoroughly prepare research assistants to perform data collection tasks. The trainees received a thorough orientation about all facets of the Employer Needs Assessment. They were also given copies of the college bulletin and other materials so that they would have an opportunity to become very familiar with Tri-County TEC, the data-collection instruments, and the data-collection tasks for which they were selected to perform. The training sessions proved to be valuable because they gave the interviewers an excellent opportunity to learn about the goals, objectives, and procedures of the Employer Needs Assessment Project. The interviewers were also repeatedly reminded to be objective and to record all information as accurately as possible during the course of the on-site interviews.

After training sessions for interviewers were conducted, the interviewers were oriented about the personnel in business and industry who were to be surveyed. A master list (frame) of all major industries in the service industry had been prepared by the project secretary for use by the interviewers.

The names and addresses of all firms to be interviewed were typed on 3" x 5" cards. These cards were then classified geographically, (e.g., by county and then by city or community within the county). This procedure was

devised so that interviewers could consolidate site visits, insofar as possible. For example: all business and industries for the town of Pickens were grouped so that the interviewers could select firms that were in close proximity and then prepare interviewing schedules appropriately. This process eliminated the possibility of interviewers having one on-site visit in a town on a given day and another on-site visit in still another town as much as 30 miles away. The conduct of interviews began during the last week of November, 1979; by March 16, 1979, all on-site interviews had been completed.

Collection of Background Information/Statistics

From the moment the survey was begun, the project director and the project secretary embarked upon a systematic program designed to locate and record pertinent information about many aspects of the service area. Generally, these data could be categorized as follows: geographical considerations, population characteristics, educational attainment characteristics, employment data, and economic information. Sources for these data included numerous local, state, and federal government documents, among which were census publications, statistical abstracts, higher education compilations and fact books, occupation outlook handbooks, industrial handbooks, industrial directories, etc.

As a result of the search for background information, a considerable amount of data was collected, e.g., characteristics about the area's labor force, educational attainment levels, per capita and median family income, per capita value of manufacturing products, annual industry payrolls, population trends, and other pertinent data. Many of these data are presented in narrative or tabular formats in Chapters 2, 3, and 4 of this report. Trends in various industries--particularly those types represented within the tri-county area--were also identified as a result of a search for background information.

Letter of Introduction to the Survey

Shortly after the project was initiated, a letter of introduction to the research project was prepared by Dr. Don Garrison, President of Tri-County Technical College. The letter announced the purposes and scopes of the anticipated study and solicited participation on the part of businesses and industries. Enclosed with the letter was a self-addressed, postal card. Industrial representatives were encouraged to indicate on the card whether their firm would participate in the Employer Needs Assessment, along with the names of the appropriate persons who could be interviewed by research assistants. (A copy of the president's letter is included in the appendix of this report). As a result of the distribution of the president's letter, more than 60 per cent of the invited industries offered to participate, and provided the names of appropriate representatives. The remaining 40 per cent of the businesses and industries were then contacted by telephone, at the end of a three-week period. Eventually 94 per cent of the invited business and industries in the tri-county service area agreed to participate in the Employer Needs Assessment. The interviewers, because of their persistence, were able to gain a high degree of participation in the survey.

Setting Appointments for On-Site Interviews

The responsibility for obtaining appointments with local businesses and industries was placed on the interviewers themselves. So that the interviewers would not have to make use of their home telephones, research assistants were instructed to make use of the telephones in the Development, Grants, or Planning Offices at Tri-County TEC. Generally, the interviewers were able to cluster on-site visits; however, there were some occasions in which the interviewers could not secure appointments at desired times. It should be noted that outstanding cooperation on the part of industrial personnel officers was obtained throughout the survey. With a few rare exceptions, most personnel officers were eager to participate in this survey and to provide the needed information.

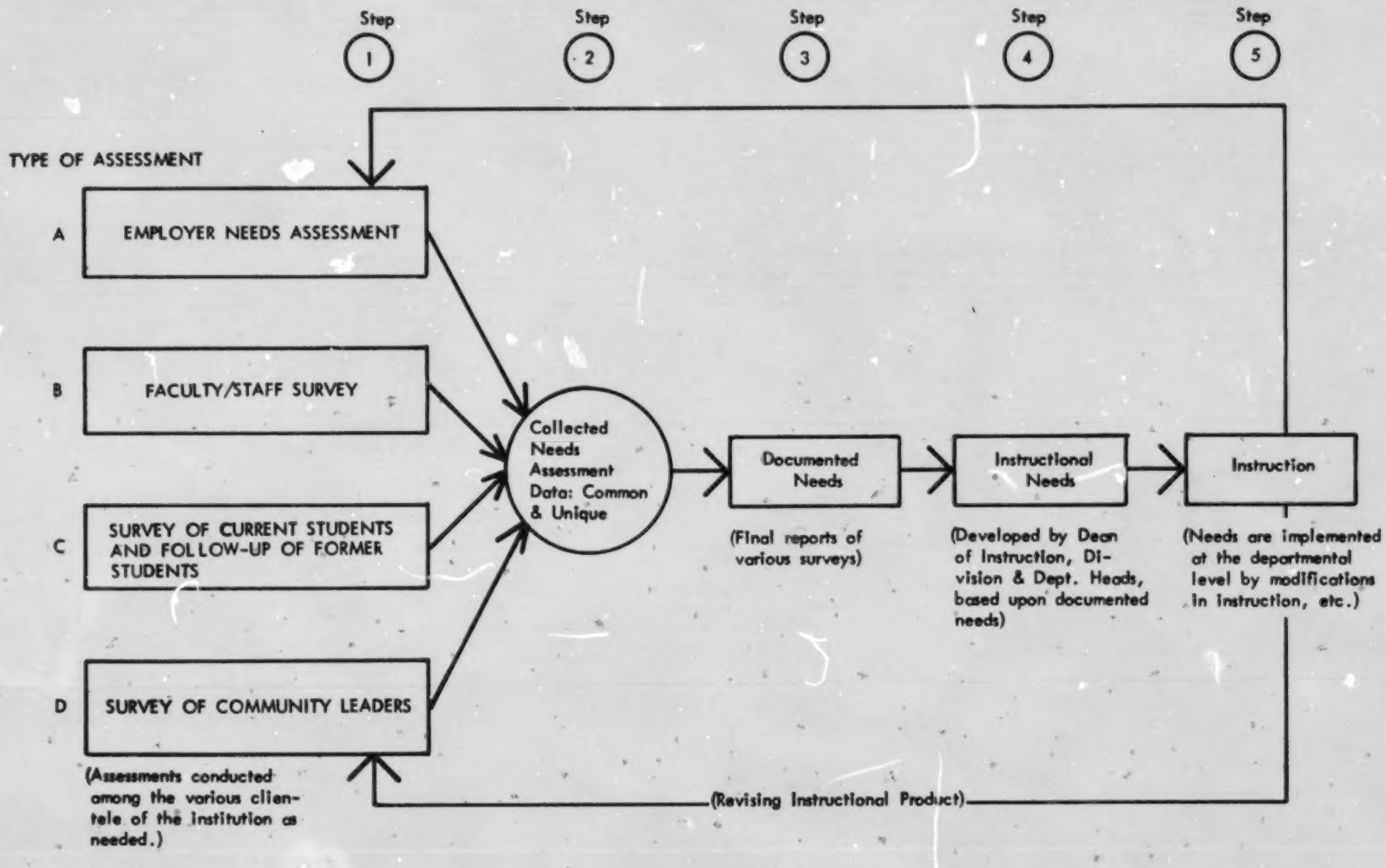
Before their work began, interviewers were given forms on which they recorded the dates, times, and places of their interview sesssions, as well as the number of miles they traveled during the course of making on-site visits to industrial firms.

Because of the limited amount of funds available to pay interviewers, all research assistants were employed with salaries at the minimum hourly wage. While the relatively low pay scale did not prove to be a disadvantage for some of the part-time college students who were working on the project, two of the interviewers did drop out because of low salaries. These persons were replaced immediately by additional interviewers who were then trained by the project staff before they began their data collection tasks.

As most of the interviewers returned to Tri-County TEX on a weekly basis in order to make additional appointments by telephone, completed questionnaires and other data-collection instruments were submitted to the project director on a more or less weekly basis. All completed instruments were collected by the project secretary, who also maintained a current record of the hours worked and miles traveled by interviewers. During the course of the interview session, the project director met with each interviewer from time to time to obtain "feedback" about the progress of data collection, to examine their interview forms, and to spot check whether interviewers had problems. Thus, the project director was able to keep abreast of the progress of the survey. In some cases minor problems had to be settled as a result "feedback" from interviewers and/or industries.

During the period in which data collection was conducted, the project secretary began to tabulate various qualitative and quantitative collected data. Master talley sheets were prepared for each questionnaire item; therefore, as the questionnaires were returned the pertinent data was extracted and entered on an appropriate master talley sheet. As a result of this procedure, the project secretary was able to keep abreast of data tablulation; thus, upon completion of the interview session, the project secretary and director were able to begin the categorization and analysis of the data.

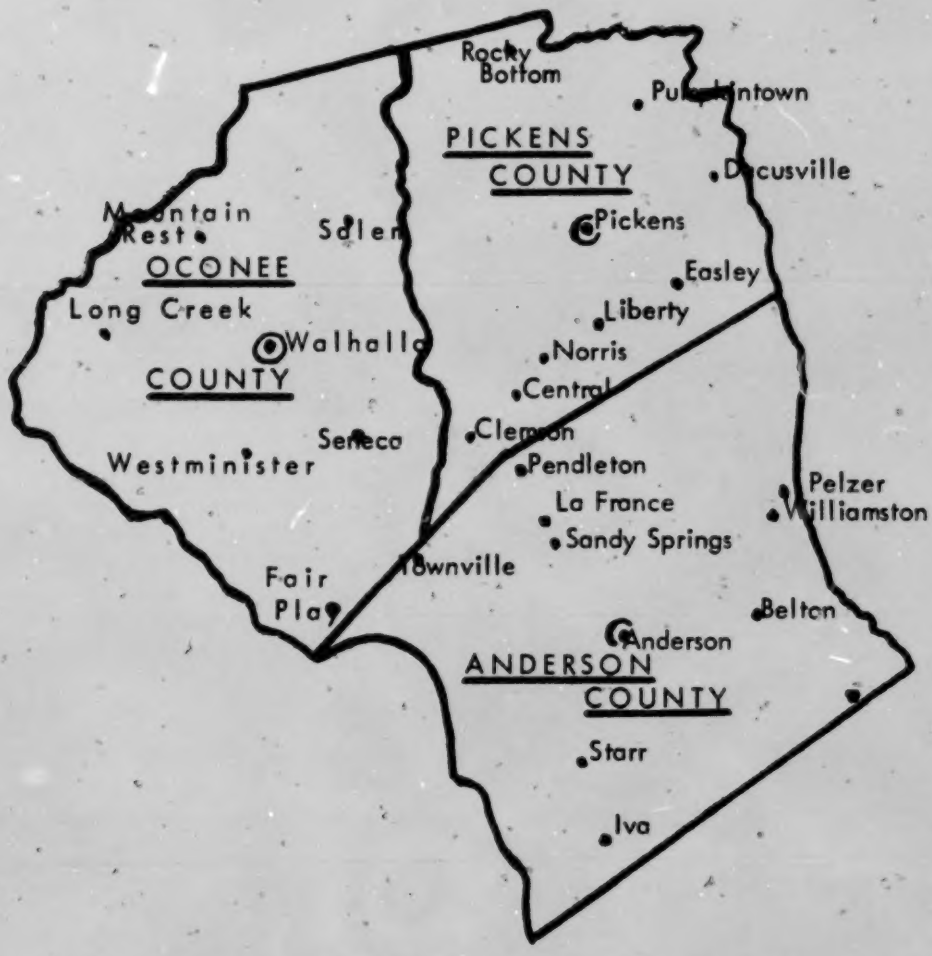
SUGGESTED NEEDS ASSESSMENT PROCESS


Step 1
Step 2
Step 3
Step 4
Step 5
TYPE OF ASSESSMENT
A
EMPLOYER NEEDS ASSESSMENT
B
FACULTY/STAFF SURVEY
C
SURVEY OF CURRENT STUDENTS AND FOLLOW-UP OF FORMER STUDENTS
D
SURVEY OF COMMUNITY LEADERS
(Assessments conducted among the various clientele of the institution as needed.)
Collected Needs Assessment Data: Common & Unique
Documented Needs
(Final reports of various surveys)
Instructional Needs
(Developed by Dean of Instruction, Division & Dept. Heads, based upon documented needs)
Instruction
(Needs are implemented at the departmental level by modifications in instruction, etc.)
(Revising Instructional Product)

Chapter 2

GENERAL BACKGROUND

The primary service area of Tri-County Technical College in the northwestern corner of South Carolina is made up of Anderson, Oconee, and Pickens counties. Within two of these counties, Oconee and Pickens, the Blue Ridge Mountains occupy part of the terrain. From the blue colored, sunlit mountains, the land drops to the Piedmont Plateau with its picturesque hills and valleys. The climate of the area is temperate, and normal seasonal variations occur in the temperature, producing four distinct seasons--spring, summer, fall, and winter. For many decades, the principle natural resource of the tri-county area was its farm land; however, agriculture currently takes a secondary seat to manufacturing in the area's economy.



MAP OF THE TRI-COUNTY SERVICE AREA (S.C.)

ANDERSON COUNTY

Anderson County consists of 758 square miles and lies in the foothills of the Blue Ridge Mountains. The 1976 estimated population of the county was 116,600 (ranked 6th in the state in terms of population). It is situated in the northwestern part of South Carolina, approximately 100 air miles from Columbia. The county was formed from lands ceded to the state in 1977 by the Cherokee Indians. In 1789 the present counties of Anderson, Pickens, and Oconee became Pendleton District, with a courthouse located in Pendleton. Settled primarily by former Revolutionary War soldiers who were granted land in partial payment for their military services, Anderson County was named for Col. Robert Anderson when it was created in 1816 out of Pendleton District.

The county seat is the city of Anderson, which is primarily an industrial city that was incorporated in 1882. In addition to the county seat, Anderson County contains the incorporated towns of Belton, Honea Path, Iva, Pendleton, Pelzer, Starr, West Pelzer, and Williamston.

Anderson County lies in the Piedmont Plateau and enjoys a mild climate. Until recent decades, the county was one of the most active agricultural centers of the state. Cotton, corn, and small grain and forage crops formerly were grown extensively on thousands of owner-operated farms. At the present time, agriculture does not play the dominating role in the county's economy which it did for many years.

The city of Anderson has long been a textile-manufacturing center; it is situated about midway between Atlanta, Georgia, and Charlotte, North Carolina. Among the products manufactured in Anderson are clothing, cotton cloth, rayon fabrics, textile machinery, fiber glass, and fishing tackles. The city is sometimes called the "Electric City" because it was among the first in the South to be supplied with as much hydroelectric power as it could use. The first hydroelectric plant in the area was built in Anderson County in 1894 at High Shoals, on the Rocky River. Hartwell Dam was completed about 20 miles southeast of Anderson in 1963. The dam is more than 15,000 feet wide, and its reservoir, Lake Hartwell, is a recreational area for boating, fishing, and other water sports. The surrounding agricultural area produces dairy and beef cattle. Near Anderson is La France, one of the earliest cotton mills in the South, built in 1838 and still operating.

Anderson County is the fifth most populous county in South Carolina; it ranks third among the six counties of the South Carolina Appalachian Region. Anderson has a long history as a one-industry community; however, it presently shares in the development of the Piedmont region's diversified industrial expansion. With the completion of highway I-85, transportation to and from such metropolitan centers as Atlanta and Charlotte has been greatly facilitated. Although recent years have witnessed the impressive founding and growth of many manufacturing firms within Anderson County, textile related industries still predominate. Agricultural activity in Anderson County has steadily declined in recent years. At the present time, Anderson County's agriculture is only 2.4 per cent of the total value for the state. Anderson County has some 130 different industries involved in service and goods. A list of these companies is provided on the following four pages.

MAJOR INDUSTRIES OF ANDERSON COUNTY

(Over 25 Employees)

COMPANY	LOCATION	EMPLOYEES
Abney Mills Plant #1	Anderson	316
Abney Mills Riverside Plant	Anderson	302
Abney Mills Toxaway Plant	Anderson	394
Allenwood Plastics Co., Inc.	Anderson	35
Amco Industries Inc.	Anderson	40
American Bakeries	Anderson	240
Anderson Concrete Co., Inc.	Anderson	26
Annesco, Inc.	Anderson	82
Bobby Dan Mfg. Co.	Anderson	425
Carolina Mop Mfg. Co.	Anderson	29
Clark-Schwebel Fiber Glass Co.	Anderson	710
Coble Dairy Products Co-Op Inc.	Anderson	39
Coca Cola Bottling Co.	Anderson	57
Dan River Mills Haynesworth Plant	Anderson	365
Darby Electric Co., Inc.	Anderson	44
Dodd Metal Works, Inc.	Anderson	40
Dow Badische Co.	Anderson	1413
Electric Printing Co.	Anderson	49
Experimental Fabrics Inc.	Anderson	26
Foundry Steel Inc.	Anderson	93
Gemini-Textile Corp.	Anderson	100
Independent Publishing	Anderson	233

COMPANY	LOCATION	EMPLOYEES
Lowenstein, M. & Sons, Inc. Orr Lyons Mill	Anderson	892
Lowenstein, M. & Sons, Inc. Wamsutta	Anderson	675
Machine Parts Inc.	Anderson	65
Owens Corning Fiberglass Corp.	Anderson	1582
Pepsi Cola-7-up Bottling Co.	Anderson	64
Robintech Inc.	Anderson	60
Schmid Labs Inc.	Anderson	40
Scott Co., Inc.	Anderson	333
Seabrook Inc.	Anderson	68
Singer Co.	Anderson	2021
Southern Weaving	Anderson	74
Stauffer Chemical Co. Plastics Div.	Anderson	500
J. P. Stevens & Co.	Anderson	1232
Superior Concrete Co., Inc.	Anderson	37
Temco, Inc.	Anderson	50
Traco Steel, Inc.	Anderson	45
True Temper Corp.	Anderson	100
Weave Craft Rug Co., Inc.	Anderson	40
Wellington & Equiknox Plants	Anderson	900
Winn Tenna	Anderson	26
Wrights Provisions	Anderson	46
Belton Bagging Co.	Belton	25
Bigelo Sanford Co.	Belton	122
Blair Mills	Belton	325
Blue Ridge Beef Plant	Belton	60

COMPANY	LOCATION	EMPLOYEES
Essex International	Belton	620
Jeffrey Mfg. Division	Belton	196
Metric Shirt Corp.	Belton	235
Milliken & Co.	Belton	160
Oxford Of Belton	Belton	137
Rice Mills	Belton	130
Wells Aluminum Southeast Inc.	Belton	60
Dixie Container Co.	Honea Path	90
Honea Path Shirtmakers	Honea Path	250
Lowenstein M. & Sons Chiquola Mill	Honea Path	500
Milliken & Co.	Honea Path	119
Parke Davis & Co.	Honea Path	150
Torrington & Co.	Honea Path	300
Iva Manufacturing	Iva	101
Jackson Mills	Iva	416
Riegel Textile Corp.	La France	990
Gilliam's Pork Inc.	Pelzer	27
Kendall Co.	Pelzer	990
Model Coat, Inc.	Pelzer	136
Cheney Bros. Southern Inc.	Pendleton	100
Milliken & Co. Gerrish	Pendleton	240
Milliken & Co. Excelsior	Pendleton	500
Pam Manufacturing	Pendleton	72
C & R Container	Piedmont	36
Michelin Tire Corp.	Sandy Springs	700

COMPANY	LOCATION	EMPLOYEES
Anchor Homes, Inc.	Starr	45
Starr Textile Mills Corp.	Starr	200
Braxton Ltd.	Williamston	285
Global Natural Resources Corp.	Williamston	100
Milliken & Co. Cushman	Williamston	750
Mt. Vernon Mills	Williamston	349
Williamston Mfg.	Williamston	200

OCONEE COUNTY

Located in the extreme northwestern part of South Carolina, Oconee County contains 650 square miles, 200 of which are mountains. The mean altitude of the county is 1000 feet. Walhalla (population 3.662) is the county seat of Oconee County. Other incorporated towns in Oconee County are Salem, Seneca, Westminster, and West Union. The 1976 estimated population of the county was 45,500 (38,900 whites and 4,500 blacks).

The Nantahala Forest Reservation embraces 40,000 acres of forest-covered mountain land in Oconee County. On this government-owned land, scientific forestration is practiced.

Oconee County is bounded on the east by Lakes Jocassee, Keowee, and Hartwell, all of which have been developed in very recent years along the paths and tributaries of the Whitewater, Keowee, and Seneca rivers. On the west, the county is bounded by the Tugaloo and Chattooga rivers.

Original inhabitants of Oconee County were Cherokee, Creek, and Iroquois Indians, many of whom lived on or near the Keowee, Chattooga, Tugaloo, and Seneca rivers. De Soto visited the Indian town of Keowee in 1539.

In earlier years Oconee County was predominently agricultural; however, during the past two decades the area has become more and more industrialized. Approximately half of the county's labor forces is employed in manufacturing. Oconee County produces more apples than any other county in South Carolina, and it has a thriving lumber processing and pulpwood industry. Cattle breeding and raising are also advancing as occupations in the county.

A list of major industries in Oconee County is provided on the following page.

MAJOR INDUSTRIES OF OCONEE COUNTY

(Over 25 Employees)

COMPANY	LOCATION	EMPLOYEES
Fairplay Mfg. Co.	Fairplay	68
Davis Bros. Lumber Company	Richland	27
Richland Garment	Richland	241
Grow Industries	Salem	128
K B K	Salem	180
Coats & Clark, Inc.	Seneca	230
Jantzen-Southern, Inc.	Seneca	750
The Journal Co., Inc.	Seneca	29
Kendall Co.	Seneca	646
Pellco Inc.	Seneca	44
Phillips Fibers Corp.	Seneca	327
S N S South	Seneca	78
J. P. Stevens & Co., Inc.	Seneca	825
Chicopee Mfg. Co.	Walhalla	460
Torrington Co.	Walhalla	332
Walhalla Mills Inc.	Walhalla	48
Anda-Ka Industries Inc.	West Union	260
Sangamo Weston Inc. Oconee Plant	West Union	1100
Beacon Mfg.	Westminster	297
Blue Bell Inc.	Westminster	85
Dunlop Tire & Rubber	Westminster	350
Jantzen-Southern, Inc.	Westminster	265

PICKENS COUNTY

Pickens County was formed by the South Carolina Constitution of 1868. It lies between Greenville County (Saluda River border) on the east, Lake Keowee and Lake Jocassee on the west, North Carolina on the north, and Anderson County on the south. Pickens County is in the Third Congressional District and the Thirteenth Judicial Circuit. It was named for General Andrew Pickens, the Revolutionary War patriot and militia leader who owned Hopewell plantation in the southern tip of the county near Clemson.

Pickens County is comprised of 338,560 acres (529 square miles). Its population in 1970 was 58,956; in 1976 its estimated population was 69,200 (65,600 whites and 3,600 blacks). The northern part of the county is thinly populated, being comprised of picturesque mountains surrounded by fertile valleys in which corn, hay, and small grain are produced. Maximum elevation of the county (and the state) is as Sassafras Mountain (el. 3,560 feet) near the North Carolina line. Numerous bold streams in Pickens County lead into the border lakes of Keowee and Jocassee. The hills and mountains of the county are covered with hardwood and other timber, much of which has been judiciously cut and marketed in the form of lumber or other wood products. The county's fine clay soil once served as a foundation for substantial agricultural productivity; however, farming is presently the main occupation of relatively few of the county's inhabitants. Included within the county is the main campus and a large part of the property of Clemson University.

The town of Pickens, the county seat, is the highest incorporated town in the state, being 1,162 feet above sea level. In 1970 the county seat's population was 2,958. The town is connected by a branch of railroad to Easley, the largest town in Pickens County. In 1970 the population of Easley was 11,175. The lower part of Pickens County (south of the county seat) is more populated than the northern section. Along the 36 miles of the Southern Railway main line that cuts through the county are located the towns of Norris, Central, Easley, Liberty, and Clemson.

A list of the major industries in Pickens County is provided below.

MAJOR INDUSTRIES OF PICKENS COUNTY

(Over 25 Employees)

COMPANY	LOCATION	EMPLOYEES
Dan River, Inc. Woodside Division	Cateechee	240
American Enka Company	Central	1036
Cannon Mills Co. Plant #12	Central	290
Pratt-Read Company	Central	588

COMPANY	LOCATION	EMPLOYEES
Jacobs Manufacturing Co.	Clemson	196
Milliken & Company		
Defore Plant	Clemson	227
J. P. Stevens & Co.		
Delta Finishing Plant #1	Clemson	2100
T R W		
United Greenfield Div.	Clemson	193
Alice Manufacturing Co.		
Arial Plant	Easley	387
Elljean Plant	Easley	400
Foster Plant	Easley	429
Alice Plant	Easley	340
Dan River Inc.		
Woodside Division	Easley	499
E M C Industries Inc.	Easley	225
Engineering Custom Plastics	Easley	300
Hendricks Processing Co.	Easley	80
Kleinert Inc.	Easley	340
Mayfair Mills		
Glenwood Division	Easley	475
Platt Saco Lowell Corp.	Easley	1660
Platt Saco Lowell		
Replacement Parts Center	Easley	56
Shirtmaker Guild, Ltd.	Easley	117
Southern Weaving Company	Easley	119
Swirl, Inc.	Easley	213
Dan River Inc. Woodside Div.		
Plant No. 1	Liberty	834
Plant No. 2	Liberty	244
Emb-Tex Corp.	Liberty	96
Libco Mill, Mohasco	Liberty	250
Ohio Gear Division		
Wallace Murrary Corp.	Liberty	196

COMPANY	LOCATION	EMPLOYEES
Vulcan Materials Co.	Liberty	73
Brunswick Worsted Mills, Inc.	Pickens	174
Compton & Cloer Lumber Co.	Pickens	62
Executive Service Co. Workwear Corp.	Pickens	150
Golder Tye Division National Railway Utilization	Pickens	42
Imperial Die Casting Corp.	Pickens	40
Kent Manufacturing Co.	Pickens	121
Mayfair Mills Pickens Division	Pickens	340
Sangamo Weston Inc.	Pickens	866
Singer Company Piedmont Die Casting Div.	Pickens	179
Singer Company Motor Products Division	Pickens	1495
Sir Shirtmakers Workwear Corp.	Pickens	150

Percentage distributions of the occupations of employed persons, by sex and race for 1970 are displayed on the next three pages.

ANDERSON COUNTY

PERCENTAGE DISTRIBUTION OF THE OCCUPATION OF EMPLOYED PERSONS, BY SEX AND MINORITY STATUS, 1970

Occupation	BOTH SEXES			FEMALE		
	Total	% White	% Non-White	% Total	% White	% Non-White
PERCENT DISTRIBUTION, 1970:						
ALL OCCUPATIONS	45,947	83.2	16.8	41.5	33.3	08.2
PROFESSIONAL, TECHNICAL & RELATED	4,133	89.6	10.4	51.0	43.6	07.4
Engineers	379	100.0	0	0	0	0
Medical & Health Workers	500	86.2	13.8	34.4	28.2	06.2
Teachers, Elem. & Sec. Schools	1,192	78.9	21.1	80.7	66.1	14.6
Other Professional	2,062	94.7	05.3	47.3	42.4	04.9
MANAGERS & ADMINISTRATORS, NONFARM	2,696	97.2	02.8	15.3	14.6	00.7
SALES	2,580	98.1	01.9	36.1	35.1	01.0
Retail Stores	1,797	97.4	02.6	48.5	47.1	01.4
Other Sales Workers	783	99.6	00.4	07.5	07.5	0
CLERICAL	4,884	95.3	04.7	70.2	68.2	02.0
Sec., Stenos., & Typsists	1,207	98.7	01.3	97.4	96.1	01.3
Other Clerical Workers	3,677	94.2	05.8	61.2	59.0	02.2
CRAFTSMEN, FOREMEN & RELATED	7,543	91.9	08.1	05.3	04.6	00.7
Construction Craftsmen	1,343	82.0	18.0	0	0	0
Mechanics & Repairmen	2,551	96.1	03.9	0	0	0
Machinists & Other Metal Craftsmen	419	90.7	09.3	0	0	0
Other Craftsmen.	3,230	92.8	07.2	12.4	10.7	1.7
OPERATIVES EXCEPT TRANSPORT	15,217	84.0	16.0	53.6	45.8	07.8
Durable Goods Mfg.	1,919	76.7	23.3	48.7	38.4	10.3
Nondurable Goods Mfg.	12,184	86.2	13.8	57.0	50.0	07.0
Nonmanufacturing	1,114	73.0	27.0	25.4	04.2	12.2
TRANSPORT EQUIPMENT OPERATIVES	1,145	72.3	27.7	04.8	03.9	00.9
LABORERS, NONFARM	2,293	60.6	39.4	13.9	19.9	04.0
SERVICE EXC. PRIVATE HOUSEHOLD	3,370	60.0	40.0	57.4	31.0	26.4
Cleaning & Food Service	1,859	47.0	53.0	54.4	23.2	31.2
Protective Service	299	97.3	02.7	03.3	02.0	01.3
Personal, Health & Other Services	1,212	70.4	29.6	75.4	50.1	25.3
PRIVATE HOUSEHOLD WORKERS	1,301	15.2	84.8	97.7	13.7	84.0
FARM WORKERS	785	72.3	27.7	07.7	06.2	01.5

Notes: NA = Not Available

Source: Census of Population, 1970 and South Carolina Employment Security Commission
Manpower Research & Analysis (LMIA)

OCONEE COUNTY

PERCENTAGE DISTRIBUTION OF THE OCCUPATION OF EMPLOYED PERSONS, BY SEX AND MINORITY STATUS, 1970

Occupation	BOTH SEXES Total	BOTH SEXES % White	BOTH SEXES % Non-White	FEMALE % Total	FEMALE % White	FEMALE % Non-White
PERCENT DISTRIBUTION, 1970:						
ALL OCCUPATIONS	17,469	90.6	09.4	40.2	35.7	04.5
PROFESSIONAL, TECHNICAL & RELATED	1,291	92.2	07.8	40.5	35.5	05.0
Engineers	125	100.0	0	0	0	0
Medical & Health Workers	103	95.2	04.8	29.1	29.1	0
Teachers, Elem. & Sec. Schools	334	84.4	15.6	73.4	63.2	10.2
Other Professional	729	94.0	06.0	34.0	29.9	04.1
MANAGERS & ADMINISTRATORS, NONFARM	872	100.0	0	16.7	16.7	0
SALES	665	98.4	01.6	31.7	30.1	01.6
Retail Stores	468	97.6	02.4	42.7	40.4	01.3
Other Sales Workers	197	100.0	0	05.6	05.6	0
CLERICAL	1,340	98.1	01.9	71.2	70.2	01.0
Sec., Stenos., & Typists	318	100.0	0	96.2	96.2	0
Other Clerical Workers	1,022	97.6	02.4	63.4	62.0	01.4
CRAFTSMEN, FOREMEN & RELATED	3,267	95.8	04.2	05.7	05.4	00.3
Construction Craftsmen	668	94.8	05.2	0	0	0
Mechanics & Repairmen	1,010	96.4	03.6	0	0	0
Machinists & Other Metal Craftsmen	190	97.4	02.6	0	0	0
Other Craftsmen	1,399	95.6	04.4	13.3	12.6	0.7
OPERATIVES EXCEPT TRANSPORT	6,667	91.5	08.5	58.8	54.1	04.7
Durable Goods Mfg.	2,199	90.2	09.8	64.8	59.0	05.8
Nondurable Goods Mfg.	3,836	92.8	07.2	62.8	59.3	03.5
Nonmanufacturing	632	88.1	11.9	14.1	05.5	08.6
TRANSPORT EQUIPMENT OPERATIVES	506	90.9	09.1	04.6	04.6	0
LABORERS, NONFARM	1,111	81.7	18.3	14.6	12.1	02.5
SERVICE EXC. PRIVATE HOUSEHOLD	1,114	74.6	25.4	50.9	40.3	10.6
Cleaning & Food Service	448	56.0	44.0	47.3	32.1	15.2
Protective Service	209	100.0	0	01.9	01.9	0
Personal, Health & Other Services	457	81.2	18.8	76.8	65.9	10.9
PRIVATE HOUSEHOLD WORKERS	313	25.9	74.1	100.0	25.9	74.1
FARM WORKERS	323	88.2	1118	07.4	07.4	0

Notes: NA = Not Available

Source: Census of Population, 1970 and South Carolina Employment Security Commission
Manpower Research & Analysis (LMIA)

PICKENS COUNTY

PERCENTAGE DISTRIBUTION OF THE OCCUPATION OF EMPLOYED PERSONS, BY SEX AND MINORITY STATUS, 1970

Occupation	BOTH SEXES Total	BOTH SEXES % White	BOTH SEXES % Non-White	FEMALE % Total	FEMALE % White	FEMALE % Non-White
PERCENT DISTRIBUTION, 1970:						
ALL OCCUPATIONS	24,399	90.8	09.2	39.3	35.0	04.3
PROFESSIONAL, TECHNICAL & RELATED	3,054	96.1	03.9	39.5	37.4	02.1
Engineers	221	97.7	02.3	0	0	0
Medical & Health Workers	141	84.4	15.6	10.6	10.6	0
Teachers, Elem, & Sec. Schools	592	94.4	05.6	86.8	82.6	04.2
Other Professional	2,100	97.2	02.8	32.3	30.5	01.8
MANAGERS & ADMINISTRATORS, NONFARM	1,601	98.9	01.1	16.3	16.1	00.2
SALES	946	100.0	0	40.0	40.0	0
Retail Stores	623	100.0	0	53.8	53.8	0
Other Sales Workers	323	100.0	0	07.4	07.4	0
CLERICAL	2,446	97.7	02.3	74.0	72.9	01.1
Sec., Stenos., & Typists	659	97.4	02.6	96.7	94.1	02.6
Other Clerical Workers	1,787	97.8	02.2	65.6	65.1	00.5
CRAFTSMEN, FOREMEN & RELATED	4,276	94.1	05.9	05.4	05.1	00.3
Construction Craftsmen	750	84.1	15.9	0	0	0
Mechanics & Repairmen	1,109	96.5	03.5	0	0	0
Machinists & Other Metal Craftsmen	370	100.0	0	0	0	0
Other Craftsmen	2,047	95.4	04.6	11.2	10.7	0.5
OPERATIVES EXCEPT TRANSPORT	7,776	90.0	10.0	55.6	49.5	06.1
Durable Goods Mfg.	1,692	94.0	06.0	51.6	49.0	02.6
Nondurable Goods Mfg.	5,400	89.5	10.5	60.7	54.0	06.7
Nonmanufacturing	684	84.2	15.8	25.3	15.4	09.9
TRANSPORT EQUIPMENT OPERATIVES	599	88.5	11.5	03.5	03.5	0
LABORERS, NONFARM	1,254	75.4	24.6	10.4	09.6	00.8
SERVICE EXC. PRIVATE HOUSEHOLD	1,853	82.6	17.4	48.6	38.8	09.8
Cleaning & Food Service	921	73.8	26.2	50.1	36.0	14.1
Protective Service	126	97.6	02.4	05.6	03.2	02.4
Personal, Health & Other Services	806	90.2	09.8	53.7	47.6	06.1
PRIVATE HOUSEHOLD WORKERS	326	17.5	82.5	100.0	17.5	82.5
FARM WORKERS	268	82.1	17.9	10.4	08.5	01.9

Notes: NA = Not Available

Source: Census of Population, 1970 and South Carolina Employment Security Commission
Manpower Research & Analysis (LMIA)

TRI-COUNTY TECHNICAL COLLEGE

In 1961, under the administration of Governor Ernest F. Hollings, the South Carolina General Assembly, by Act 323, Section 23, established the Advisory Committee for technical training, and provided for the establishment of regional technical education centers. In 1962 Anderson, Pickens, and Oconee counties began planning for a Technical Education Center located near Pendleton. This center was named Tri-County Technical Education Center, reflecting the combined efforts of the Three Charter Counties. It was a unique enterprise, for never before had such a joint effort been made in South Carolina. Representatives from the three counties met and formed the Tri-County Technical Education Commission with Aubrey Marshall as Chairman.

Tri-County TEC, initially a $500,000 project, opened to students in 1963. The first building, Pickens Hall, accommodated several hundred students. The first curriculum and facilities supported such courses as Mechanical Technology, Machine Shop, Welding, Air Conditioning and Refrigeration, Textile Shop, Technical Drafting and Design, Electronics, Industrial Electricity, Chemical Laboratory Technicians. These early courses were designed to train students to carry out routine engineering and detailed work under supervision of professional engineers.

Since 1963, the institution has continued to thrive and grow to its present enrollment of 2,500 students.

The campus, which consists of approximately 55 acres, now has 7 classroom and laboratory buildings to support the 29 diploma and degree programs which are currently offered.

Program offerings have expanded to include a wide variety of technical skills, engineering technologies, and college transfer.

The name of the institution was changed to Tri-County Technical College in 1974 to clearly relate to the public that Tri-County TEC is a collegiate-level institution emphasizing technical training.

Plans are under way for additional expansion of educational offerings and facilities to meet the expanding population and industrial needs of this tri-county area.

Tri-County Technical college is located on Highway 76 near Pendleton, South Carolina, approximately in the geographic center of Anderson, Oconee, and Pickens counties. It is easily accessible by automobile from all three counties and commands a superb view from atop a bluff near the highway.

INSTITUTIONAL MISSION AND GOALS

In keeping with its philosophy, Tri-County Technical College's doors are open and accessible to all students desiring to further their education. A comprehensive community college seeking to provide equal educational opportunity for all, Tri-County TEC recognizes its responsibility to Anderson, Oconee, and Pickens Counties and to South Carolina by responding to the needs and abilities of all students, helping them to attain their educational and occupational objectives in a positive, student-centered learning environment; by assisting all students to recognize their potential as worthwhile and productive members of society; by providing a quality education at the lowest possible cost; by serving the employment needs of business and industry; and by responding to the economic growth of the area to be used by State and Local Development Boards to attract new and diverse industry to the region to insure the diversification and growth of the industrial economic base. The purpose of Tri-County Technical College is the same as that of the South Carolina Technical Comprehensive Education System created in 1961 by the General Assembly through enabling legislation Act 323, Section 23. This purpose is "to provide instruction to prepare individuals for entering into or progressing to employment in industrial and technical pursuits, or designed to improve conditions which result in improved citizenship."

INSTITUTIONAL GOALS

- To develop continually a two-year, postsecondary institution which provides programs of vocational-technical education, freshman and sophomore college parallel curricula, general education development courses, continuing education and community service for adults, special schools training, and federally-financed courses of study responsive to the educational, occupational, and cultural needs of the community.

- To make the people of Anderson, Oconee, and Pickens Counties aware of the maximum potential of the institution.

- To provide equal higher education opportunity for all and to help each student to beocme all he/she is capable of being.

- To provide a physical and academic learning environment to accommodate the needs and learning potential of all who seek enrollment within an open door institution.

- To provide a comprehensive student development services program which will facilitate the intellectual growth and the social, emotional, and physical well-being of students.

- To promote the socio-economic growth and development of Anderson, Oconee, and Pickens Counties by insuring that all resources available to the institution are fully utilized.

- To provide an accountable administrative management system which maximizes the human, physical, and financial resources available to the institution.

- To develop continually a quality instructional delivery system which will enable all students to acquire at their own rates and according to their own styles competencies needed to be successful.

- To provide a learning resources center that offers instruction, resources, and services to the college and to the tri-county service area.

DEVELOPMENT OF INSTITUTIONAL MISSION

In 1962, the South Carolina General Assembly provided for the establishment of Tri-County Technical Education Center (now known as Tri-County Technical College) under the authority of Act 905. The purpose/mission of Tri-County Technical College under Act 905, Section 4, requires the Anderson-Oconee-Pickens Education and Training Commission, "to provide for the creation, maintenance and operation of a technical education center where programs of adult pre-employment, adult extension, and high school pre-employment training shall be developed and carried out." In 1972, Act 1268, Section 3, added the first year and second year college parallel curriculum.

A Self-Study Purpose Committee submitted a revised statement of purpose to the faculty and staff for their approval in March, 1974. Upon approval of the faculty and staff, the purpose statement was submitted to the administration and approved on April 25, 1974.

An Institutional Planning Process was developed and implemented in 1977; within this process, a College Management Council was appointed to act as an advisory council to the administration. The council has representatives from the administration, faculty, students, and service area. The current institutional purpose/mission was developed by the council and approved by the administration on April 25, 1977. The council will review the purpose/mission on an annual or needs basis and revise as necessary to support the training needs of the service area.

INSTITUTIONAL BACKGROUND

Tri-County Technical College in Pendleton, South Carolina, is a fully accredited, two-year community college that serves Anderson, Oconee, and Pickens counties. The institution's service area is comprised of approximately 2,000 square miles; it is half of the Appalachian Region within the Piedmont area of South Carolina. Historically, the institution has drawn about 48 per cent of its enrollment from Pickens County, 22 per cent from Oconee County, with the remaining 6 per cent originating from other South Carolina areas or from out-of-state localities.

As of July, 1976, the estimated population of the major service area of the college was 228,400. Of this number, 198,000 (87%) were white and 29,500 (13%) were non-white. Approximately half of the total population of the area was female. According to the 1970 census, the ages of 33.4 per cent (68,501)

of the population were under 18 years; the ages of 58.2 per cent (119,435) were between 18 and 64 years; and the ages of 8.4 per cent (17,222) were over 65 years.

In recent years the economy of the area has been based primarily upon manufacturing, especially within textile and apparel industries. During FY 1978, manufacturing accounted for 57 per cent of the jobs, many of which were relatively low-paying compared to salaries within the state and nation. For example, the average weekly salary of area residents during 1976 was $158, whereas the average weekly salary of state residents as a whole in 1976 was $166, and the average weekly salary of employees over the nation was $199.

However, new and different kinds of industries are continuously moving into Anderson, Oconee, and Pickens counties. By 1980, thirteen new industries and expansions within ten established industries are expected to create 4,000 new jobs for employees in the three counties. Tri-County Technical College has an obligation to provide training for these new and expanding industries.

The overall educational attainment level of the population within South Carolina's Appalachian Region is still below the national average. Five per cent of all first-grade students repeated that grade in 1976-77; of the students enrolled in the first grade in 1962-63 only 55 per cent graduated from high school twelve years later; in 1976-77 only 45.1 per cent of the district's high school graduates continued their formal education; in 1974-75, 1,615 students dropped out of high school. Only 18.5 per cent of the area's residents within the 25 years-of-age or older bracket had completed four years of high school as of 1976-77. The average academic grade level completed by area residents who were 25 years of age or older was 9.8 years.

The South Carolina Job Service Office in its Annual Planning Report for 1978 identified four target groups of the population who were experiencing unemployment or difficulty in obtaining alternative job opportunities. These groups were the economically disadvantaged, veterans, minorities, and youths. In South Carolina's Appalachian region, 56.9 per cent of the members of these four groups who applied for jobs through Job Service had attained less than a high school education.

The relatively low educational level among residents, coupled with the geographic area's heavy dependence on employment in textile and apparel industries with relatively low-paying jobs, contributed to the area's relatively low per capita income level of $4,326 in 1976. This level does not compare very favorably with the state per capita income average of $4,521 and the national average of $5,204.

ENROLLMENT SOURCES AND AREAS OF SPECIAL NEED

Approximately 94 per cent of Tri-County Technical College's student body comes from Anderson, Oconee, and Pickens counties. Because of the socio-economic characteristics of this still predominantly rural area many of the college's present and future students have complex and interrelated psychological,

social, familial, medical, and other problems which if not dealt with effectively could prevent them from taking full advantage of training and employment opportunities. These students require:

1) special support services to assist them toward the accomplishment of their educational objective(s);

2) a multiple instructional delivery system and a teaching strategy which will allow for differences in learning rates created by differences in ability and motivation; and/or

3) flexible scheduling so that they can continue to work while attending classes.

Tri-County Technical College attempts to solve special problems and to fulfill the special needs of these students; it focuses attention on the above mentioned problems/solutions commensurate with available financial resources.

The technical and vocational educational needs of commerce have also been major concerns of the administration and staff of Tri-County Technical College. Because of the rapid industrialization of the institution's service area, the college has been called upon very frequently to provided skilled manpower as well and special employee upgrading programs. If the college is to continue to be a viable force in the economic development of its service area, the institution must maintain close coordination and cooperation with business and industry to insure the quality and relevancy of all of Tri-County Technical College's educational programs.

CURRENT ENROLLMENT PATTERNS AND PROJECTED CHANGES

Student characteristics during the fall quarter are discussed in the section which follows.

LOW INCOME STUDENTS

During the 1976-77 academic year, thirteen per cent of Tri-County TEC's student body came from families with incomes of less than $3,000; 30 per cent came from families with incomes of less than $7,500; and 61 per cent came from families with incomes of less than $10,000. The college assisted many of these students through various financial aid programs (e.g., BEOG, CWSP, and scholarships). Veterans and dependents of deceased or disabled veterans received VA benefits. During the 1976-77 academic year, 1,872 students (57 per cent of the student body) received financial aid of one type or another.

OTHER DISADVANTAGED SEGMENTS OF THE STUDENT BODY

In 1976-77, more emphasis was placed by Tri-County TEC on the recruitment of handicapped and limited English-speaking persons. As a result, 30 handicapped and 15 limited English-speaking students were enrolled in the institution's curriculum programs. Emphasis on the recruitment of minorities resulted in 1977-78 in a minority enrollment of 14 per cent--one per cent higher than the minority representation within the population of the service area.

CURRENT ENROLLMENT PATTERNS AND PROJECTED CHANGES AT TRI-COUNTY TECHNICAL COLLEGE

		Fall 1977	Fall 1978	Projections 1983-84 School Year
I.	Veterans Status			
	A. Veteran-G.I. Bill	900 (36.6%)	818 (34.5%)	564 (24.5%)
	B. Veteran-No G.I. Bill	15 (.6%)	6 (.3%)	2 (.1 %)
	C. Non-Veteran	1546 (62.8%)	1543 (65.2%)	1734 (75.4%)
	D. Not Specified	0 (0%)	0 (0%)	0 (0%)
		2461 (100 %)	2367 (100 %)	2300 (100 %)
II.	Classification			
	A. Freshman	1437 (58.4%)	741 (31.3%)	1343 (58.4%)
	B. Sophomore	775 (31.5%)	572 (24.2%)	725 (31.5%)
	C. Unclassified	249 (10.1%)	1054 (44.5%)	232 (10.1%)
		2461 (100 %)	2367 (100 %)	2300 (100 %)
III.	Ethnic Group			
	A. Black	342 (13.9%)	333 (14.0%)	345 (15 %)
	B. White	1919 (78 %)	1934 (81.7%)	1909 (83 %)
	C. Indian American	4 (.2%)	11 (.5%)	12 (.5%)
	D. Spanish American Surname	2 (.1%)	4 (.2%)	2 (.1%)
	E. Oriental American	5 (.2%)	9 (.4%)	9 (.4%)
	F. Foreign	9 (.3%)	20 (.8%)	23 (1 %)
	G. Not Specified	180 (7.3%)	56 (2.4%)	0 (0%)
		2461 (100 %)	2367 (100 %)	2300 (100 %)
IV.	Sex			
	A. Male	1648 (67 %)	1611 (68 %)	1610 (70 %)
	B. Female	813 (33 %)	756 (32 %)	690 (30 %)
		2461 (100 %)	2367 (100 %)	2300 (100 %)
V.	Average Age	26.8	25.7	26
VI.	A. Part-Time	418 (17 %)	398 (17 %)	460 (20 %)
	B. Full-Time	2043 (83 %)	1969 (83 %)	1840 (80 %)
		2461 (100 %)	2367 (100 %)	2300 (100 %)
VII.	Enrollment by County			
	A. Anderson	1181 (48 %)	1160 (49 %)	1104 (48 %)
	B. Oconee	541 (22 %)	544 (23 %)	506 (22 %)
	C. Pickens	591 (24 %)	568 (24 %)	552 (24 %)
	D. Other	148 (6 %)	95 (4 %)	138 (6 %)
		2461 (100 %)	2367 (100 %)	2300 (100 %)

RETENTION

During the 1976-78 (last two years), Tri-County TEC has experienced a dropout rate of approximately 30 per cent. As a result, more emphasis has been placed on the retention of students. The college has instituted the following means to reduce the dropout rate:

- Increased referrals to the Division of Comprehensive Studies (DOCS) If testing indicates that a student is weak in basic skills training and, consequently, might have trouble in a curriculum program, he/she is referred to DOCS, the developmental component of the college, for upgrading before entering the curriculum program.

- Increased referrals to the learning labs. Difficulties in certain subjects will be reduced through referral to the learning labs. Currently, assistance is available in : 1) medical assisting, 2) accounting, 3) shorthand, 4) Spanish, 5) English, 6) science, 7) history, 8) government, 9) mathematics, and 10) sociology. During FY 1977, students spent 19,198 hours in the learning labs.

- Increased emphasis on competency-based instruction. As financial resources allow, Tri-County Technical College will move closer toward its goal of implementing competency-based instruction in all programs.

- Increased faculty and staff development activities. An effort is being made to develop the faculty and staff in the area of student retention. Several seminars and workshops have already been conducted.

- Increased student support services. Many improvements in the Student Services Division have resulted from the college's involvement in the Student Development ACCTion Center since 1977; other improvement will be made during FY 1980.

- During July, 1978, the college received a Special Services grant that is providing special counseling, tutoring, and other supportive services to 100 disadvantaged students during the 1978-79 academic year. A proposal has been submitted for continuation of these services during 1979-1980.

- Increased utilization of resources available in the Instructional ACCTion Center (IAC). The faculty will continue to benefit from the resources available in the Faculty Resource Center. This center is maintained by the IAC staff and contains information on subjects of interest to faculty, including student retention.

TRAINING PROGRAMS

Tri-County Technical College seeks to serve the area and fulfill its mission by providing: 1) certificate, diploma, and associate degree programs in occupational education, 2) two-year college transfer programs, 3) general education development programs, 4) continuing adult education programs, 5) community services, 6) federally-financed training programs for those referred to the college by the job service offices in the area, and 7) special school training for new and expanding industries.

During 1977-78, the college offered 22 associate degree programs and 13 diploma programs. These programs are administered by four divisions: 1) Business and Human Services Division, 2) General Education Division, 3) Industrial Division, and 4) Technical Division.

More than 40 per cent of the curriculum students enroll in one of the departments of the Business and Human Services Division. This division offers programs in accounting, marketing, management, secretarial science, animal industry, medical assisting, medical laboratory technology, child development, criminal justice, and animal health technology.

The General Education Division administers the associate of science and associate of arts curricula. From 1973-74 to 1977-78, the enrollment of these curricula increased over 5 per cent. After having graduated from the AA or AS programs, students can transfer to Clemson University, Furman University, Bob Jones University, or one of the other four year colleges/ universities in the area to complete their formal education. The General Education Division also provides related training for all the other divisions.

The Industrial Division provides training programs in air conditioning, auto body repair, automotive mechanics, industrial electronics, brick masonry, industrial maintenance mechanic, general technology, machine tool technology, millwork and cabinet making, and welding.

The Technical Division provides training in civil engineering technology, electronic engineering technology, engineering graphic technology, mechanical engineering technology, industrial engineering technology, nuclear engineering technology, radio and television broadcasting, and textile management.

ASSESSMENT OF PROJECTED EMPLOYMENT OR CAREER OPPORTUNITIES

Since its establishment fifteen years ago, the college has provided educational programs to raise the socio-economic conditions of local residents and has acted as a tool for economic development by providing skilled graduates to meet the manpower demands of local commerce.

The college's presence in the tri-county area has played a significant part in the attraction of new industries and the expansion of existing industries. As an example, negotiations between TEC officials, area developers, and industrial leaders will result in approximately 4,000 new jobs for local citizens over the next two years.

Providing skilled personnel to meet manpower demands requires close coordination between the college and local industry. As technology changes, curriculum programs must be revised or designed to keep pace if the college is to maintain an active part in the economic development of the area.

The college uses five primary means of keeping abreast of the changing educational needs of industry:

- Advisory Committees. The college has an advisory committee for each of its curriculum programs. Each advisory committee serves as a sounding board for curriculum assessment and evaluation. It ensures

program relevance by making suggestions for revisions/additions to the program as necessary to meet changing technological demands.

- Industrial Representative. The college has an industrial representative who, through on-site visits, gathers information on the training and upgrading needs of industry.

- Office of Career Development. Tri-County Technical College has an Office of Career Development manned by a director and a placement officer. The office is responsible for gathering and analyzing data on national and local employment trends and prospects, as well as providing career guidance to students and assisting in job placement.

- Employer Surveys. Periodically, employer surveys are conducted to determine if adequate need exists for training in a specific area (i.e., computer programming).

- Employer Needs Assessment for Anderson, Oconee, and Pickens Counties. Tri-County Technical College is conducting an employer needs assessment during FY 1979. This project focuses on present employment, turnover rate, projected manpower needs, and future training needs.

  The needs assessment project will assist the college in answering the following questions:

  1. How well is Tri-County Technical College responding to the occupational needs of citizens, businesses, and industries, and other organizations in the service area?

  2. For the period 1979-1985, what are the occupational trends for the tri-county area and how can TEC respond to the job needs associated with these trends?'

The dependent variables of the study include: 1) the number of existing unfilled jobs for which training is provided by TEC, 2) the number of unfilled jobs for which training is not provided by TEC, 3) anticipated permanent jobs through 1985 in both of the above categories, and 4) attitudes of employers toward TEC-trained employees.

PURPOSE/MISSION

In keeping with its philosophy, Tri-County Technical College's doors are open and accessible to all students disiring to further their education. A comprehensive community college seeking to provide equal educational opportunity for all, Tri-County TEC recognizes its responsibility to Anderson, Oconee, and Pickens Counties and to South Carolina by responding to the needs and abilities of all students, helping them to attain their educational and occupational objectives in a positive, student-centered learning environment; by assisting all students to recognize their potential as worthwhile and productive members of society; by providing a quality education at the lowest possible cost; by serving the employment needs of business and industry; and by responding to the economic growth of the area to be used by state and local development boards to attract new and diverse industry to the region to insure the diversification and growth

of the industrial economic base. The purpose of Tri-County Technical College is the same as that of the South Carolina Technical and Comprehensive Education System created in 1961 by the General Assembly through enabling legislation Act 323, Section 23. This purpose is "to provide instruction to prepare individuals for entering into or progressing to employment in industrial and technical pursuits, or designed to improve conditions which result in improved citizenship."

MISSION ATTAINMENT

Before 1978, Tri-County Technical College did not have the research capability to determine if its mission adequately provided for the post-secondary training needs of the service area. However, in July, 1978, the college received funding from the State Department of Education to conduct the Employer Needs Assessment for Anderson, Oconee, and Pickens counties.

The assessment will assist the administration to determine how well the college is responding to the occupational needs of the area, what the occupational trends for the area will be from 1979 to 1985, and how Tri-County TEC can respond to the job needs associated with the trends.

STATEWIDE TEC GOALS

The following goals are long-term statements of general purpose for the State TEC System as a whole. Their order of presentations is not meant to imply priority. Priorities change through the years as they reflect changing needs. Priorities are expressed for any one fiscal year by programs of time-constrained measurable objectives derived from goals and designed to meet the specific needs identified for that year.

I. Meet occupational needs by providing associate degree, diploma, and certificate programs open to all citizens in post-secondary vocational and technical education.

II. Meet the needs of new and expanding industries, and other employers, and promote economic development by providing industrial services and manpower development programs and services.

III. Meet the needs of individuals for upgrading or developing skills and knowledge by providing adult and continuing education programs.

IV. Meet the needs of individuals who have not yet made career decisions by providing access to the first two years of college through college parallel programs.

V. Meet the cultural and general education needs of local areas by providing community service programs.

VI. Help students achieve personal and professional objectives by providing a comprehensive student services program with a strong emphasis on counseling.

VII. Improve instructional effectiveness and help students learn by employing systematic instructional approaches and modern technology.

VIII. Provide the management support necessary to make educational programs effective by employing systematic planning approaches and modern technology.

IX. Project a favorable public image as a unique part of higher education, maintain effective relationships with other agencies, and expand financial resources by employing systematic public information and fund raising procedures.

X. Make the "open door" a reality by minimizing geographic, economic, academic and other barriers to educational opportunity while striving to make each student successful.

Chapter 3

EDUCATION

GENERAL

Based upon data collected in the 1970 U. S. Census, educational attainment levels for citizens of Anderson County who are 25 years old or over are as follows:

1) Four or more years of college--6.6 per cent
2) One to three years of college--6.8 per cent
3) Four or more years of high school--17 per cent
4) One to three years of high school--27.6 per cent
5) Five to eight years of elementary school--29.1 per cent
6) One to four years of elementary school--9.6 per cent
7) No school years completed--2.0 per cent

The median school years completed by the 25 years-old-or-over population age bracket of Anderson County is 10.0 years (rank in state = 17). Between 1960 and 1970, the increase in median years completed by the county's population (25 years old or over) was 1.4.[1] In 1976-77, 27.8 per cent of the nonwhite population and 20.3 per cent of the white population of Anderson County was enrolled in public schools.[2]

Based upon data collected in the 1970 U. S. Census, educational attainment levels for citizens of Oconee County who were 25 years old or over are as follows:

1) Four or more years of college--4.3 per cent
2) One to three years of college--4.4 per cent
3) Four or more years of high school--17.3 per cent
4) One to three years of high school--26.1 per cent
5) Five to eight years of elementary school--35.1 per cent
6) One to four years of elementary school--10.7 per cent
7) No school years completed--2.1 percent

The median school years completed by the 25 years-old-or-over population age bracket of Oconee County is 9.2 (rank in state = 32). Between 1960 and 1970, the increase in median school years completed by the county's population (25 years old or over) was 1.1.[1] In 1976-77, 27.9 per cent of the nonwhite and 22.3 percent of the white population of Oconee County was enrolled in public schools.[2]

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[1]United States Census, 1970, Series PC(1)-C-42.

[2]South Carolina State Budget and Control Board, Division of Research and Statistical Series, "South Carolina Provisional Estimates of Population by Race and County, July 1, 1976."

Based upon data collected in the 1970 U. S. Census, educational attainment levels for citizens of Pickens County who are 25 years old or over are as follows:

1) Four or more years of college--10.0 per cent
2) One to three years of college--7.7 per cent
3) Four or more years of high school--17.8 per cent
4) One to three years of high school--23.4 percent
5) Five to eight years of elementary school--30.4 per cent
6) One to four years of elementary school--9.1 per cent
7) No school years completed--1.5 per cent

The median school years completed by the 25 years-old-or-over population age bracket of Pickens County is 10.1 (rank in state = 15). Between 1960 and 1970, the increase in median school years completed by the county's population (25 years or older) was 1.7.[1] In 1976-77, 38.6 per cent of the nonwhite and 18.7 of the white population of Pickens County was enrolled in public schools.[2]

HIGHER EDUCATION

In 1965, the opening fall enrollment of all students (degree-credit and non-degree-credit) in all institutions in South Carolina was 43,946. Five years later (1970), enrollment in all institutions had increased to 69,518, and in 1975 total enrollment was 133,023. However, by 1977 enrollment had decreased to 123,779. Between 1975 and 1977, opening fall enrollment of degree-credit and non-degree-credit students in all insitutions in South Carolina declined 6.9 per cent from the previous two-year period. In the period between 1967 and 1977 total higher education enrollment of all degree-credit and non-degree-credit students in South Carolina declined from 37 per cent of the total student enrollment to 21 per cent. Opening fall higher education enrollment of first-time degree-credit and non-degree-credit students in all institutions in South Carolina declined from 38,624 in 1975 to 36,639 in 1977. The percentage of first-time degree-credit opening fall enrollment in all higher education institutions in South Carolina declined from 38.6 per cent for the period 1960-1965 to 17.6 per cent for the period 1974-1975. The ratio of first-time higher education student residents to high school graduates was .39 in 1968; by 1975, the ratio was .85.[3]

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[1]United States Census, 1970 Series PC(1)-C-42.

[2]South Carolina, State Budget and Control Board, Division of Research and Statistical Services, "South Carolina Provisional Estimates of Population by Race and County, July 1, 1976."

[3]A Fact Book on Higher Education, Enrollment Data Second Issue, 1977 ed. by Charles Anderson, Washington, D. C.: American Council on Education, 1977. pp. 77.82, 77.84, 77.88, 77.104, 77.106, 77.131.

In the fall of 1977, 125,24[illegible] students were enrolled in all higher education institutions in South Carolina; this amount represented a state increase of +34 percent between 1972-1977. In 1976, the ratio of the total higher education enrollment in South Carolina to the 18-24 year old population group was .30. Two-year college enrollment accounted for 32 percent of higher education students in the state in 1977. The following breakdown indicated higher education enrollment according to four- and two-year institutions in South Carolina:

Public Institutions		Private Institutions	
Four-Year	Two-Year	Four-Year	Two-Year
63,258	36,348	22,503	3,136
Total: 99,606		Total: 25,639	

Full-time equivalent enrollment in public higher education institutions of South Carolina in 1977-78 was 50,260; of this number, 32,630 were enrolled in two-year colleges. Between 1976 and 1981, a projected change of +8.6 per cent is expected in South Carolina's total higher education enrollment (assuming participation rates at the average of low and high alternatives). By the same token, a -1.5 percent change in the state's higher education enrollment is projected for the period 1981-1986.

In 1975, 30.8 per cent of South Carolina's population was black; however, in the following year (1976) 20.9 per cent of the total higher education enrollment in the state was black. In the fall of 1976, the total black enrollment in public two-year institutions of higher education in the state was 29.3 per cent of the total enrollment of these institutions; in private, two year institutions 22 per cent were black. Between 1971 and 1975, an increase of 132.3 per cent occurred in South Carolina in the number of associate degrees and other awards below the baccalaureate level. During the same period, the per cent of change in all associate degrees and other awards of public institutions (transfer and non-transfer) was 205.0 percent.[1]

Enrollment in higher education is subject to much more variability than education at the elementary and secondary levels. Higher education is rather vulnerable to such factors as changing economic conditions, political and administrative decisions, cost of education, changing values placed on the holding of degrees, etc. The distinction between degree-credit and non-degree-credit students has become unclear in recent years. Increases in percentage of part-time students enrolled reflects the tendency of older students (25 years-old and over) to attend institutions of higher education. Based upon projections, the percentage of women enrolled in higher education in the nation will increase slightly from 47 per cent in 1976 to nearly 49 per cent in 1986.

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[1] Fact Book of Higher Education in the South 1977-1978.

Full-time equivalent enrollment (all full-time students plus part-time students converted to their equivalent number full-time students, as determined by each institution) increased from 3.7 million in 1963 to 8.5 million in 1975. Then in 1976 it decreased to 8.3 million, the first decrease since the early 1950's.[1]

Higher college attendance levels and spending are expected to continue through the next five years. The college-age population is rising, and there appears to be a greater awareness that numerous job opportunities in our technologically oriented society require specialized training beyond that offered by high schools. In the fall of 1977, a record 10.4 million degree-credit students were enrolled in the nation's two- and four-year colleges, compared with 7.9 million in 1970. By 1982, degree-credit students are expected to total 11.3 million persons, and 30 percent of these will be attending two-year colleges. College employment payrolls and student spending on housing, entertainment, and food contributed significantly to the local economies of numerous communities. Many colleges--especially community colleges--are attempting to attract more adult students; in some cases credit is being offered for experiential learning and integrating classroom learning with practical work experience. In addition, an estimated 13 million persons are enrolled each year in technical, management, and other formal courses sponsored by business, professional, and government organizations. These courses appear to have stimulated interest among some students in further study at senior colleges or universities.

Planning for education in the near future will reflect the impact of declining birth rates, solutions to budget deficits and inequities in school financing methods, and the introduction of innovative educational techniques to revitalize educational curricula at many levels. Because limited employment opportunities presently exist for liberal arts college graduates enrollments in career-oriented courses in both two- and four-year colleges are likely to continue to rise in the immediate future. Educational spending in the nation as a whole is expected to reach about $180 billion by the 1981-82 school year, reflecting an average annual gain of 6.5 percent over 1976-77 levels.[2]

In 1976, the Southern Regional Education Board issued a position statement relating to priorities for postsecondary education in the South. Among the adopted priorities that are germane to technical and vocational education are the following:

1) Provision of postsecondary opportunities for minority and ethnic groups;

2) Education and training for employment is a crucial need for high school graduates in the South;

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[1] Projections of Education Statistics to 1986-87, edited by Martin M. Frankel (Washington: National Center for Educational Statistiscs, 1978). pp. 10-12.

[2] U. S. Department of Commerce, U. S. Industrial Outlook, 1978 With 5-Year Projections for 200 Industries, Washington, D. C., U. S. Government Printing Office, 1978. p. 453.

3) Special consideration should be given to non-traditional alternatives for learning at the undergraduate, graduate, and professional levels;

4) Educational reform should be based upon a systematic assessment of educational outcomes and impact, and should lead to improved faculty performance and productivity;

5) Adequate, equitable, and efficient funding.[1]

It should be noted that a statistical "oversupply" of college graduates does not signify that these graduates will experience significant levels of unemployment. Traditionally, the unemployment rate of college graduates has been lower than that of less educated workers. Among college graduates, problems will center on underemployment and job dissatisfaction, both of which are expected to result in increasing mobility within occupational categories rather than in unemployment. Many persons may have to take jobs that have not usually required a college degree-perhaps jobs in which the past of employees training might not be fully utilized. Sales, clerical, and service jobs are expected to absorb numerous surplus college graduates.[2]

Table 3.1

PERCENT OF 1977 GRADUATES ENTERING JUNIOR AND SENIOR COLLEGES BY SCHOOL DISTRICT*

DISTRICT	TOTAL GRADUATES	ENTERING COLLEGE	PERCENT	RANK
Anderson 1	253	94	37.2	55
Anderson 2	214	87	40.7	40
Anderson 3	119	33	27.7	76
Anderson 4	131	64	48.9	18
Anderson 5	721	335	46.5	22
Oconee	609	221	36.3	59
Pickens	829	366	44.1	30

*Rankings of the Counties and School Districts of South Carolina, 1977-78 (Columbia, S. C. Department of Education, Office of Research, 1979), p. 128.

[1]Higher Education and Government: Mutual Expectations and Responsibilities" Regional Apotlight: News of Higher Education in the South, 12(3) (Summer 1978), 3.

[2]Occupational Outlook for College Graduates 1974-75. U. S. Department of Labor, Bureau of Labor Statistics, 1974. p. 20.

In table 3.2 total enrollment in two-year institutions of higher education in the nation is provided, along with projections to the year 1986. It should be noted that the projected enrollment of women in 1986 exceeds that of men by 592,000; that the ratio of part-time to full-time student will be almost two-to-one; and that between 1977-1986 publicly supported two-year colleges will experience a 57.8 percent increase in enrollment.

Table 3.2

TOTAL ENROLLMENT IN 2-YEAR INSTITUTIONS OF HIGHER EDUCATION IN THE UNITED STATES, WITH ALTERNATIVE PROJECTIONS, BY SEX AND ATTENDANCE STATUS OF STUDENTS AND CONTROL OF INSTITUITON: FALL 1963-1986*
(in thousands)

Year (Fall)	Total Enrollment	Sex		Attendance Status		Control	
		M	W	Full-time	Part-time	Public	Private
1977	4308	2189	2119	1816	2492	4165	143
1978	4648	2326	2322	1904	2744	4500	148
1979	5013	2476	2537	2001	3012	4858	155
1980	5394	2627	2767	2098	3296	5232	162
1981	747	2775	2972	2184	3563	5580	167
1982	6089	2907	3182	2260	3829	5917	172
1984	6734	3157	3577	2391	4343	6584	180
1985	7048	3276	3772	2450	4598	6866	182
1986	7386	3397	3989	2516	4870	7200	186

*Source: Projections of Education Statistics to 1986-87, edited by Martin M. Frankel (Washington: National Center for Educational Statistics, 1978). p. 25.

Among the black age group of 1-21, in 1976 barely one-fourth was attending college, compared to over one-third of white students of the same age.[1]

Between 1972 and 1976, the total black higher education enrollment in South Carolina increased from 10,082 to 19,834. Blacks' higher education enrollment in the state between 1972 and 1976 increased as a percentage of the total full-time enrollment from 16 percent to 22 percent.[2]

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[1] "Manpower and the Minority Student," Regional Spotlight-Southern Regional Education Board 11(September, 1976):L

[2] A Fact Book of Higher Education. (1972 ed.) pp. 77.92-77.94.

John Roueche, a national authority on compensatory education, pointed out in 1976 that the attrition figures for minorities and poor whites in some Southern states is seventy percent. Roueche went on to say:

> "If high school graduates are deficient and have difficulty coping in modern America, consider the problems facing those Americans without a high school education. Today's losers in school...can expect little change of "winning" outside of school. This phenomenon has not always been true in America Even in the past twenty years, individuals who were not successful or interested in formal schooling could succeed or "make it" in society. This occurence is not almost impossible.[1]

In October, 1978, Dr. Elchanan Cohn, professor of economics at the University of South Carolin, indicated that while nationwide college enrollment will decline over the next decade (1980-1990), South Carolina will probably experience a substantial increase. The enrollment rate (the total number of degree-bound students divided by the total state population in the 19-to-21-year-old age bracket) was predicted at 38.3 percent or 87,860 students in 1975. Dr. Cohn predicted an enrollment rate of 51.9 percent in 1985 and that 127,649 degree-credit students will be enrolled that year in South Carolina colleges. The economics professor also predicted dramatic increases in TEC enrollments, e.g., from 19,145 in 1975 to 43,877 in 1985. Dr. Cohn pointed out that factors that could affect these predictions include 1) changes in attitudes, 2) job opportunities, 3) loan availabilities, and 4) tuition rates. According to Dr. Cohn: "The predictions also depend on the general health of the state's economy and the availability of good jobs and the existence of a receptive climate for business expansion."[2]

AREA HIGHER EDUCATION INSTITUTIONS

Table 3.3 contains a list of the four institutions of higher education in the service area of Tri-County Technical College. Two of these institutions are junior colleges--one privately supported and the other publicly supported. One of the four institutions is a four-year college, and another offers four-year educational programs, plus numerous graduate degree programs--some of which lead to doctorates. It should be noted that among the four-year institutions in the area, Tri-County Technical College has the lowest average cost to students for a school year.

According to the 1978 edition of the South Carolina Statistical Abstract, full-time fall enrollment in South Carolina colleges and universities increased by 70.1 per cent between 1970 and 1977. Public colleges and universities experienced larger enrollments; however, increases in private college enrollments were proportionately very small.

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[1]"USC, TEC Enrollments Expected to Grow" The Greenville News. October 3, 1978.

[2]"A Lingering Problem-Dropping Out," Regional Spotlight--Southern Regional Education Board 11(September 1976):7.

Table 3.3

COLLEGES AND UNIVERSITIES IN THE TRI-COUNTY AREA*

INSTITUTION	ADDRESS	PRESIDENT	DATE FOUNDED	ENROLLMENT 1977	AFFILIATION AND/OR SUPPORT	LEVEL OF SCHOOL	MEN, WOMEN, CO-ED	SESSION PLAN	DEGREES OFFERED	AVERAGE TOTAL COST FOR SCHOOL YEAR
Anderson College	Anderson	Ray Rust	1911	1,231	So. Bapt.	Junior	Co-ed	Sem-Ss	Acad. & Prof.	$2880
Central Wesleyan College	Central	Claude R. Rickman	1906	386	Wesleyan	Senior	Co-ed	Sem-Ss	AB	$3534
Clemson University	Clemson	Robert C. Edwards	1889	11,361	State	Senior Graduate	Co-ed	Sem-Ss	Acad. & Prof.	$2067
Tri-County Technical College	Pendleton	Don C. Garrison	1963	2,550	State	Tech.	Co-ed	Qtr-Ss	AA, AS, AAS, Cert.	$ 400**

*SOURCE: College Facts Chart 78-79 (Spartanburg, S.C.): National Beta Club, 1978, pp. 43-44.

**Since the 78-79 College Facts Chart was published, Tri-County TEC has adjusted figures for the average total cost for a school year to $475.

Clemson offers the only bachelor's degree progrma in South Carolina in agricultural sciences, architecture, building science, industrial education, ceramic engineering, engineering analysis, engineering technology, forestry, recreation and park administration, industrial management, and the textile sciences. While Clemson's total enrollment in "traditional" classes, including off-campus institutes, is something over 11,000 each year, more than 20,000 men and women from business, industry and the professions attended continuing education courses offered by the university during the past year.

In its mission statement submitted in 1979 to the S. C. Commission on Higher Education, Clemson University officials cited the school's responsibility for the administration of many consumer protection programs in the state, pointing out that such programs as the Livestock-Poultry Health Department are "particularly unique to Clemson as a state university and are in addition to the usual land-grant responsibilities for administering the research programs of the state Agricultural Experiment Stations and Cooperative Extension Services." Clemson's report to the Commission also claimed that many of the degree programs offered at the university are unique.

Clemson University presently offers courses leading to baccalaureate degrees in 51 areas, master's degrees in 49 areas, doctoral degrees in 24 areas, and an associate degree program in nursing. Officials at Clemson have predicted that the number of graduate and undergraduate programs will remain about the same in the foreseeable future; however, they hope to establish a program leading to both levels of degrees in computer science and computer engineering. The report indicates that the supply of highly skilled professionals in the computer field is far below the current demand, and that the spread between supply and demand continues to widen. According to Clemson officials, the institution "represents the major scientific and technological resource in post-secondary education in South Carolina that most directly supports economic growth and development in improvement in the quality of life for people."[1]

In the nation as a whole the number of college students age 35 and over has risen by 100,000 since October, 1974. White, unmarried women accounted for almost all of the increase. Most of these women are self-supporting and may regard further education as necessary for career development, according to a study published by the Bureau of Labor Statistics. All of the increase in national school enrollment has been at the college undergraduate level. A total of 1.6 million persons 35 years of age and over were enrolled in school in October 1976--this number includes students in colleges, trade and vocational schools, and high schools. Persons taking courses for self-improvement, social, or recreational purposes are not included. More details on this subject can be found in Special Labor Force Report 204, Going Back to School at 35 and Over, by Ann McDougall Young.

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[1]Ann Green, "Clemson Wants Role to Reflect 'Uniqueness'" Greenville News and Piedmont, January 4, 1979, p. 13-A.

In the fall of 1978, a national sample of freshmen at two-year, public colleges was surveyed concerning the reasons students decided to go to college. The reasons given and the percentages corresponding to these reasons are shown in Table 3.4.

Table 3.4

WEIGHTED NATIONAL NORMS OF COLLEGE FRESHMEN*

REASONS FOR ATTENDING COLLEGE	PERCENT
Parents wanted me to go	27.1
Could not find a job	6.3
Get away from home	5.8
Get a better job	79.5
Gain general education	62.3
Improve reading-study skills . . .	35.6
Nothing better to do	1.8
Become a more cultured person . . .	29.4
Make more money	65.2
Learn more about things	71.1
Meet new and interesting people . .	48.9
Prepare for graduate school	38.0

*Source: Alexander W. Astin, and others. The American Freshmen: National Norms for Fall 1978. Los Angeles: American Council on Education, University of California at Los Angles, Cooperative Institutional Research Program, 1978. p. 50.

In Table 3.4 please note that 65.2 per cent of the students gave the reason of making more money and that 79.5 per cent of the students also checked to "get a better job." From these responses we are led to believe that job training and occupational training are foremost on the minds of many current college students. Because most of the programs offered at Tri-County TEC are directed toward vocational and technical education, the college might very well benefit from placing additional stress on occupational preparation in its recruiting campaigns.

Also in the fall of 1978, a national sample of freshmen at two-year, public colleges gave "important" reasons for selecting the college of their choice. In Table 3.5, the various reasons and corresponding percentages are given as a result of the question.

Table 3.5

WEIGHTED NATIONAL NORMS OF COLLEGE FRESHMEN*

REASONS FOR SELECTING COLLEGE	PERCENT
Relatives wanted me to come here	5.6
Teacher advised me	3.8
Has a good academic reputation	37.2
Offered financial assistance	9.8
Not accepted anywhere else	3.9
Advice of someone who attended	12.5
Offers special education programs . . .	23.7
Has low tuition	22.5
Advice of guidance counselor	9.2
Wanted to live at home	16.0
Friend suggested attending	6.1
College representative recruited me . .	2.1

*Source: Alexander W. Astin, and others. The American Freshman: National Norms for Fall 1978. Los Angeles, Cooperative Institutional Research Program, 1978. p. 50.

EDUCATIONAL ATTAINMENT LEVELS OF THE SERVICE AREA

In Tables 3.6 through 3.14 statistical data relating to the education of citizens in the Tri-County TEC service area are presented. Median school years completed by persons 25 years or older by race and by county are listed in Table 3.6. The median school years for South Carooina is 10.5, and the three counties all fall below that, e.g., Anderson 10.0, Oconee, 9.2, and Pickens 10.5 for all races. In all three counties whites have completed higher median school years than blacks.

Table 3.6

MEDIAN SCHOOL YEARS COMPLETED BY PERSONS 25 YEARS OR OVER BY RACE IN THE PRIMARY SERVICE AREA, 1970*

COUNTY	TOTAL ALL RACES	WHITE ONLY	BLACK ONLY
Anderson	10.0	10.3	8.0
Oconee	9.2	9.4	8.1
Pickens	10.1	10.3	7.9
South Carolina	10.5	11.4	7.6

*Source: South Carolina Statistical Abstract 1977. Columbia: South Carolina Division of Research and Statistical Services, 1977.

In Table 3.7 the percentages are provided of persons 25 years or over with only 1-4 years of elementary school. In the three counties the range is from 9.1 to 10.7 percent.

Table 3.7

PERCENT OF POPULATION 25 YEARS OLD OR OVER WITH 1-4 YEARS OF ELEMENTARY SCHOOL, 1970, BY COUNTY*

COUNTY	NUMBER WITH 1-4 YEARS ELEMENTARY SCHOOL	PERCENT	RANK
Anderson	5,592	9.6	33
Oconee	2,345	10.7	25
Pickens	2,686	9.1	36

*Rankings of the Counties and School Districts of South Carolina 1977-78 (Columbia, S. C. Department of Education, Office of Research, 1979), p. 28.

Table 3.8

PERCENT OF POPULATION 25 YEARS OLD OR OVER WITH 5-8 YEARS OF ELEMENTARY SCHOOL, 1970 BY COUNTY*

COUNTY	NUMBER WITH 5-8 YEARS ELEMENTARY SCHOOL	PERCENT	RANK
Anderson	16,894	29.1	24
Oconee	7,761	35.1	3
Pickens	8,925	30.4	18

*Ibid., p. 30.

Table 3.9

PERCENT OF POPULATION 25 YEARS OLD OR OVER WITH NO SCHOOL YEARS COMPLETED, 1970 BY COUNTY*

COUNTY	NUMBER WITH NO SCHOOL	PERCENT	RANK
Anderson	1,146	2.0	40
Oconee	465	2.1	35
Pickens	450	1.5	45

*Ibid., p. 32.

The percentages of people in the service area who are 25 years or over who have completed 4 or more years of high school are listed in Table 3.10. In Oconee County 17.3 per cent have 4 or more years of high school, in Pickens County 17.8 per cent have 4 or more years of high school, and in Anderson County 18.3 per cent have 4 or more years of high school.

Table 3.10

PERCENT OF POPULATION 25 YEARS OLD OR OVER WITH 4 OR MORE YEARS OF HIGH SCHOOL, 1970 BY COUNTY*

COUNTY	NUMBER WITH 4 YEARS HIGH SCHOOL	PERCENT	RANK
Anderson	10,654	18.3	17
Oconee	3,829	17.3	23
Pickens	5,241	17.8	19

*Rankings of the Counties and School Districts of South Carolina 1977-78 (Columbia, S.C. Department of Education, Office of Research, 1979) p. 22

Among members of the Anderson County population who are 25 years old or older 6.8 per cent have completed from one to three years of college; in Pickens County the percentage is 7.7; and in Oconee County only 4.4 per cent have one to three years of college education. Rankings for the three counties are provided in Table 3.11.

Table 3.11

PERCENT OF POPULATION 25 YEARS OLD OR OVER WITH 1-3 YEARS OF COLLEGE, 1970 BY COUNTY*

COUNTY	NUMBER WITH 1-3 YEARS OF COLLEGE	PERCENT OF POPULATION 25 YEARS OR OVER	RANK
Anderson	3,955	6.8	21
Oconee	978	4.4	45
Pickens	2,269	7.7	14

*Rankings of the Counties and School Districts of South Carolina 1977-78 (Columbia, S. C. Department of Education, Office of Research, 1979), p. 24.

Ten per cent (2,941 individuals) of the Pickens County population 25 years old or over have four or more years of college education. In Anderson County the percentage for this educational attainment bracket is 6.6 and in Oconee County it is only 4.3. These data are displayed in Table 3.12.

Table 3.12

PERCENT OF POPULATION 25 YEARS OLD OR OVER WITH 4 OR MORE YEARS OF COLLEGE, 1970 BY COUNTY*

COUNTY	POPULATION 25 YEARS +	NUMBER WITH 4 YEARS COLLEGE +	PERCENT	RANK
Anderson	58,105	3,826	6.6	28
Oconee	22,094	948	4.3	45
Pickens	29,394	2,941	10.0	6

*Rankings of the Counties and School Districts of South Carolina, 1977-78 (Columbia, S. C. Department of Education, Office of Research, 1979), p. 20.

Table 3.13

PERCENT OF NONWHITE POPULATION ENROLLED IN PUBLIC SCHOOLS, BY COUNTY*

COUNTY	NONWHITE POPULATION	ENROLLMENT	PERCENT	RANK
Anderson	21,400	5,951	27.8	37
Oconee	4,500	1,257	27.9	34
Pickens	29,394	1,391	38.6	2

*Ibid., p. 27

Table 3.14

PERCENT OF ENROLLMENT CLASSIFIED AS NONWHITE, 1977-78 BY SCHOOL DISTRICT*

DISTRICT	ENROLLMENT WHITE	ENROLLMENT NONWHITE	PERCENT NONWHITE	RANK
Anderson 1	4,458	585	11.6	87
Anderson 2	2,773	879	24.1	79
Anderson 3	1,819	616	25.3	75
Anderson 4	1,636	751	31.5	68
Anderson 5	8,898	3,166	26.2	73
Oconee	8,700	1,270	12.7	86
Pickens	12,440	1,414	10.2	90

*Ibid., p. 83.

According to the U. S. Bureau of the Census, the median school year completed by South Carolina in 1970 was 10.5 as opposed to 8.7 in 1960, an increase in 1.8 during the ten-year period.

The 1970 U. S. Census also revealed that 38.1 per cent of the population of South Carolina had completed 8 years or less of school; that 17.2 per cent of the population had attained some education beyond high school; and that 9.0 per cent had four or more years beyond high school.

Additional statistics relating to educational attainments in the service area are listed in Tables 3.15 through 3.18.

Table 3.15

PERCENT OF POPULATION ENROLLED IN PUBLIC OR NONPUBLIC SCHOOLS, 1977-1978 BY COUNTY (K-12, SPECIAL EDUCATION AND UPGRADED)*

COUNTY	POPULATION	ENROLLMENT	PERCENT	RANK
Anderson	116,600	27,678	23.7	34
Oconee	45,400	10,717	23 6	36
Pickens	69,300	15,156	21.9	41

*Rankings of the Counties and School Districts of South Carolina, 1977-78 (Columbia, S. C. Department of Education, Office of Research, 1979), p. 26.

Table 3.16

PERCENT OF POPULATION 25 YEARS OLD OR OVER WITH 1-3 YEARS OF HIGH SCHOOL, 1970 BY COUNTY*

COUNTY	NUMBER WITH 1-3 YEARS OF HIGH SCHOOL	PERCENT OF POPULATION 25 YEARS OR OVER	RANK
Anderson	16,038	27.6	4
Oconee	5,759	26.1	12
Pickens	6,882	23.4	27

Rankings of the Counties and School Districts of South Carolina, 1977-78 (Columbia, S. C. Department of Education, Office of Research, 1979), p. 39.

Table 3.17

PERCENT CHANGE IN ENROLLMENT FROM FIRST GRADE, 1966-1967 TO TWELFTH GRADE, 1977-1978 BY SCHOOL DISTRICTS*

DISTRICT	FIRST GRADE 1966-67	TWELFTH GRADE 1977-78	NET CHANGE	PERCENT CHANGE	RANK
Anderson 1	448	286	-162	-36.2	20
Anderson 2	399	232	-167	-41.9	38
Anderson 3	234	154	-80	-34.2	16
Anderson 4	233	130	-103	-44.2	44
Anderson 5	1,268	794	-474	-37.4	23
Oconee	967	625	-342	-35.4	18
Pickens	1,251	932	-319	-25.5	7

*Rankings of the Counties and School Districts of South Carolina, 1977-78 (Columbia, S.C. Department of Education, Office of Research, 1979) p. 95

Table 3.18

NUMBER OF PUBLIC AND PRIVATE SCHOOLS AND ENROLLMENT BY COUNTY IN SOUTH CAROLINA (EXCLUDING KINDERGARTEN) SCHOOL YEAR 1975-1976*

COUNTY	PUBLIC SCHOOLS NUMBER	PUBLIC SCHOOLS ENROLLMENT	PRIVATE SCHOOLS NUMBER	PRIVATE SCHOOLS ENROLLMENT
Anderson	47	25,031	6	665
Oconee	22	9,887	0	0
Pickens	26	13,532	3	342

*South Carolina Statistical Abstract 1977. Columbia: South Carolina Division of Research and Statistical Services, 1977.

Table 3.19

PERCENT OF 1977 GRADUATES ENTERING POST-SECONDARY SCHOOLS OTHER THAN JUNIOR AND SENIOR COLLEGES BY SCHOOL DISTRICT*

DISTRICT	TOTAL GRADUATES	ENTERING OTHER SCHOOLS	PERCENT	RANK
Anderson 1	252	12	4.7	64
Anderson 2	214	19	8.9	32
Anderson 3	119	17	14.3	10
Anderson 4	131	21	16.0	8
Anderson 5	721	83	11.5	20
Oconee	609	55	9.0	30
Pickens	829	43	5.2	60

*Rankings of the Counties and School Districts of South Carolina, 1977-78 (Columbia, S. C. Department of Education, Office of Research, 1979), p. 132.

Table 3.20 contains a breakdown of the number of high school graduates by school district in the tri-county service area. In Anderson County, 46.2 per cent of the public high school graduates entered postsecondary education in 1976. In Oconee County, 49.9 per cent of the high school graduates entered postsecondary education institutions, and 52.6 per cent of Pickens County high school graduates entered postsecondary education.

Approximately 42 per cent of Anderson County's 1976 high school graduates entered employment in the fall of that year. In Oconee County, 37.3 per cent of the 1976 high school graduates entered employment in the fall. Only 32.8 per cent of 1976 graduating high school students entered employment in the fall of that year.

Table 3.20

NUMBER OF TRI-COUNTY AREA PUBLIC SCHOOL GRADUATES AND PERCENT ENTERING POSTSECONDARY EDUCATION, GAINFUL EMPLOYMENT AND OTHER*

DISTRICT	NUMBER OF GRADUATES SPRING 1976	PERCENT ENTERING POSTSECONDARY EDUCATION	PERCENT ENTERING EMPLOYMENT FALL 1976	PERCENT OTHER OR UNKNOWN FALL 1976
Anderson 1	291	40.5	50.5	8.9
Anderson 2	237	49.8	35.9	14.3
Anderson 3	128	40.6	49.2	10.2
Anderson 4	121	52.1	32.2	15.7
Anderson 5	725	48.1	41.1	9.9
Oconee	565	49.9	37.3	12.7
Pickens	757	52.6	32.8	14.7

*Educational Trends in South Carolina. South Carolina Department of Education, March 1979.

AREA VOCATIONAL CENTERS

The State Department of Education, through the Office of Vocational Education, provides opportunities for adults to receive vocational training. The following vocational centers have been established in the Tri-County Area:

- Anderson County

  Anderson County
  Districts 1 & 2 Vocational Center
  Rt. 2
  Williamston, SC 29697
  B. D. Dempsey, Director

  McDuffie Vocational High School
  1225 S. McDuffie St.
  Anderson, SC 29621
  H. Wallace Reid, Director

- Oconee County

  Oconee Vocational Center
  Rt. 1, Box 176
  Seneca, SC 29678
  Nick Milasnovich, Director

- Pickens County

  Pickens County Area Vocational Center
  Rt. 8, Box 250
  Easley, SC 29640
  Robert H. Turpin, Director

The shop facilities at each of these institutions are equipped to provide secondary instruction (primarily 11th and 12th grades) in vocational areas. In general, the capability exists at each site to

teach adults in any subject area that can be accommodated by existing lab facilities. These adult classes may be scheduled during daylight hours, althought most of them usually meet in the evening. In each case, courses that are offered are subject to the availability of funds, student needs, and job demands in the local area.

Courses offered at Area Vocational Centers

- Anderson County Districts 1 & 2 Vocational Center

  Appliance Repair
  Auto Body Repair
  Automotive Mechanics
  Building Construction (Carpentry)
  Drafting
  Electricity
  Food Services
  Graphic Communications
  Health Occupations
  Heating/Air Conditioning
  Industrial Sewing
  Machine Shop
  Masonry
  Office Occupations
  Ornamental Horticulture
  Textile Management & Production
  Welding

- McDuffie Vocational High School

  Agriculture Production
  Automotive Mechanics
  Building Construction (Carpentry)
  Child Care
  Cosmetology
  Dental Assisting
  Distributive Education
  Diversified Occupations
  Drafting and Design
  Electronics
  Food Service
  Heating/Air Conditioning/Refrigeration
  Machine Shop
  Masonry

- McDuffie Vocational High School (cont.)

  Office Occupations
  Practical Nursing
  Surgical Technician
  Textiles

- Oconee Vocational Center

  Air Conditioning/Refrigeration
  Auto Body Repair
  Automotive Mechanics
  Building Construction (Carpentry)
  Cosmetology
  Distributive Education
  Drafting and Design
  Electricity
  Food Services
  Industrial Sewing
  License Practical Nurse
  Machine Shop
  Masonry
  Plumbing
  Radio/Television Repair
  Textiles
  Welding

- Pickens County Vocational Center

  Agriculture Mechanics
  Air Conditioning/Refrigeration Repair
  Automotive Mechanics
  Building Construction (Carpentry)
  Cosmetology
  Drafting and Design
  Electricity
  Electronics
  Food Services
  Graphic Communications
  Industrial Sewing
  License Practical Nurse
  Machine Shop
  Masonry
  Nursing Assistant
  Office Occupations
  Plumbing
  Sheet Metal
  Textiles
  Welding

Table 3.21

NUMBER OF STUDENTS ENROLLED IN VOCATIONAL EDUCATION
BY PROGRAM AREA IN THE TRI-COUNTY AREA, 1977-78*

DISTRICT	EDUCATION PROGRAM AREA								
	Agriculture	Distributive Education	Health Occupations	Occupational Home Economics	Office Occupations	Trade and Industrial	Pre-Vocational	Consumer Homemaking	Industrial Arts
Anderson 0	29		26	25	50	359			
Anderson 1	102	145					307	356	44
Anderson 2	89	49			192		74	264	120
Anderson 3	167				196		26	157	
Anderson 4	145	118			214		18	193	
Anderson 5	98	223		63	714	367	357	533	286
Sub-Total	630	535	26	88	1,366	726	782	1,503	450
Oconee	435	98	27	37	752	475	259	839	104
Pickens	194		34	18	582	531	244	704	235
Total	1,259	633	87	143	2,700	1,732	1,285	3,046	789

*SOURCE: Educational Trends in South Carolina. South Carolina Department of Education, March, 1979.

Chapter 4

EMPLOYMENT

BACKGROUND

Prior to about 1970 many members of the area's growing labor force could not readily find jobs in Anderson, Oconee, and Pickens counties. As a result, many young people migrated from the area to other parts of the state or to large cities of the North. In the present decade, the traditional migration of younger people has reversed, owing particularly to increasing job opportunities--opportunities that have in many ways become greater than those outside the state. As outmigration decreased in the service area, so did immigration. Newcomers moved into the three counties where they found jobs that could not be filled by available local personnel.

The major economic activity of the tri-county service area is manufacturing, which currently accounts for about 52 per cent of the labor force of Anderson, Oconee, and Pickens counties.

Anderson County

The civilian labor force of Anderson County totaled 57,870 persons in 1977; of this number 54,330 persons were employed. Unemployment in the county for 1977 was 6.1 percent (3,540 persons). In the period 1972-1977, the civilian labor force of Anderson County increased by 8,600 persons (from 49,270 in 1972 to 57,780 in 1977).[1]

Approximately 51 percent of the labor force of Anderson County is employed in manufacturing. Of the county's total labor force, 27 percent is employed in the manufacturing of textile mill products and 4 percent are involved in apparel and other textile products manufacturing jobs. Wholesale and retail trade accounts for sixteen percent of Anderson County's labor force; government employs about 12 percent of the county's workers; services account for about 9 percent; construction employs about 5 percent; and persons in finance, insurance, and real estate make up approximately 2 percent of the civilian labor force of the county.[2]

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[1] South Carolina's Manpower in Industry; Labor Force Estimates and Non-agricultural Wage and Salary Employment by Major Industry Division and Selected Industry Groups Annual Averages for 1972-1977. Prepared in affiliation with the Employment and Training Administration and the Bureau of Labor Statistics, U. S. Department of Labor. Columbia: South Carolina Employment Security Commission, June, 1978.

[2] South Carolina Manpower in Industry. Columbia, S. C.: South Carolina Employment Security Commission, Manpower Research and Analysis 1978. p. 14.

Oconee County

The civilian labor force of Oconee County totaled 18,120 persons in 1977; of this number 16,870 persons were employed. Unemployment in the county for 1977 was 6.9 percent (1,250 persons). In the period 1972-1977, the civilian labor force of Oconee County decreased by 180 persons (from 18,300 in 1972 to 18,120 in 1977).[1]

Approximately 56 percent of Oconee County's total labor force is employed in manufacturing. Of the county's total labor force, 18 percent is employed in the manufacturing of textile mill products and 16 percent is involved in apparel and other textile products manufacturing. About 21 percent of the employees are in other manufacturing jobs. Wholesale and retail trades account for 11 percent of Oconee's labor force; governments account for 14 percent; services account for 6 percent; transportation and public utilities account for 5 percent; and finance, insurance and real estate account for one percent.[2]

Pickens County

The civilian labor force of Pickens County totaled 33,000 persons in 1977; of this number 31,000 persons were employed. Unemployment in the county for 1977 was 5.8 percent (1,000 persons). In the period 1972-1977, the civilian labor force of Pickens County increased by 6800 persons (from 26,200 in 1972 to 33,000 in 1977).[3]

Approximately 49 percent of Pickens County's total labor force is employed in manufacturing. Of the county's total labor force, 21 percent is employed in the manufacturing of textile mill products and three percent are involved in apparel and other textile products manufacturing . About 24 percent of the county's employees are in other manufacturing jobs. Wholesale and retail trade accounts for 12 percent; government accounts for 23 percent; services account for 7 percent; construction accounts for 3 percent; transportation and public utilities account for 1 percent; and finance, insurance, and real estate account for 1 percent.[4]

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[1] South Carolina's Manpower in Industry; Labor Force Estimates and Non-agricultural Wage and Salary Employment by Major Industry Division and Selected Industry Groups Annual Averages for 1972-1977. Prepared in affiliation with the Employment and Training Administration and the Bureau of Labor Statistics, U. S. Department of Labor. Columbia: South Carolina Employment Security Commission, June 1978.

[2] Ibid.

[3] Ibid.

[4] Ibid.

CHARACTERISTICS OF THE AREA'S LABOR FORCE

Various characteristics of the labor force of Anderson, Oconee, and Pickens counties are listed in Table 4.1 through 4.9. White and nonwhite male and female employees are listed in Table 4.1 through 4.4.

Table 4.1

1977 TRI-COUNTY AREA WHITE MALE CIVILIAN LABOR FORCE (Estimates)*

COUNTY	LABOR FORCE	EMPLOYMENT	UNEMPLOYMENT	RATE
Anderson	28,330	27,110	1,220	4.3
Oconee	9,780	9,250	530	5.4
Pickens	18,100	17,300	80[illegible]	4.4

Table 4.2

1977 TRI-COUNTY AREA NONWHITE MALE CIVILIAN LABOR FORCE (Estimates)*

COUNTY	LABOR FORCE	EMPLOYMENT	UNEMPLOYMENT	RATE
Anderson	5,090	4,670	420	8.3
Oconee	870	830	40	4.6
Pickens	1,700	1,600	100	5.9

Table 4.3

1977 TRI-COUNTY AREA WHITE FEMALE CIVILIAN LABOR FORCE (Estimates)*

COUNTY	LABOR FORCE	EMPLOYMENT	UNEMPLOYMENT	RATE
Anderson	19,360	18,080	1,280	6.6
Oconee	6,570	6,030	540	8.2
Pickens	11,800	10,900	90[illegible]	7.6

*Source: Manpower Information For Affirmative Action Programs. Columbia: South Carolina Employment Security Commission, Manpower Research & Analysis, May, 1978. p. 10.

Table 4.4

1977 TRI-COUNTY AREA NONWHITE FEMALE CIVILIAN LABOR FORCE (Estimates)*

COUNTY	LABOR FORCE	EMPLOYMENT	UNEMPLOYMENT	RATE
Anderson	5,090	4,470	620	12.2
Oconee	900	760	140	15.6
Pickens	1,400	1,300	100	7.1

Table 4.5

1977 ANNUAL AVERAGE TRI-COUNTY AREA CIVILIAN LABOR FORCE*

COUNTY	LABOR FORCE	EMPLOYMENT	UNEMPLOYMENT	RATE
Anderson	57,870	54,330	3,540	6.1
Oconee	18,120	16,870	1,250	6.9
Pickens	33,000	31,100	1,900	5.8

Table 4.6

1977 TRI-COUNTY AREA WHITE CIVILIAN LABOR FORCE (Estimates)*

COUNTY	LABOR FORCE	EMPLOYMENT	UNEMPLOYMENT	RATE
Anderson	47,690	45,190	2,500	5.2
Oconee	15,350	15,280	1,070	6.5
Pickens	29,900	28,200	1,700	5.7

*Source: Manpower Information For Affirmative Action Programs. Columbia: South Carolina Employment Security Commission, Manpower Research & Analysis, May, 1978.

Table 4.7

1977 TRI-COUNTY AREA NONWHITE CIVILIAN LABOR FORCE (Estimates)*

COUNTY	LABOR FORCE	EMPLOYMENT	UNEMPLOYMENT	RATE
Anderson	10,180	9,140	1,040	10.2
Oconee	1,770	1,590	180	10.2
Pickens	3,100	2,900	200	6.5

*Source: Manpower Information for Affirmative Action Programs. Columbia: South Carolina Employment Security Commission, Manpower Research & Analysis, May, 1978. p. 8.

Table 4.8

PERCENT OF NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT IN MANUFACTURING, 1977 BY COUNTY **

COUNTY	TOTAL	MANUFACTURING	PERCENT	RANK
Anderson	46,420	23,800	51.3	14
Oconee	16,750	9,420	56.2	6
Pickens	28,500	14,200	49.8	18

Table 4.9

PERCENT OF 1976 GRADUATES ENTERING EMPLOYMENT AND OTHER ACTIVITIES BY SCHOOL DISTRICT**

DISTRICT	TOTAL GRADUATES	EMPLOYMENT, OTHER ACTIVITIES	PERCENT	RANK
Anderson 1	253	147	58.1	34
Anderson 2	214	108	50.5	57
Anderson 3	119	69	58.0	35
Anderson 4	131	46	35.1	86
Anderson 5	721	303	42.0	76
Oconee	609	333	54.7	47
Pickens	829	420	50.7	54

**Rankings of the Counties and School Districts of South Carolina 1977-78 (Columbia, S. C. Department of Education, Office of Research, 1979), 136.

PERSONAL INCOME

In 1976 Anderson County's per capita income was $5,238; Oconee County's per capita income was $4,992; and Pickens County's per capita income was $4,885. State rankings of these counties are displayed in Table 4.10.

Table 4.10

PER CAPITA PERSONAL INCOME, 1976 BY COUNTY*

COUNTY	POPULATION	PER CAPITA INCOME	RANK
Anderson	115,800	5,238	12
Oconee	43,400	4,922	18
Pickens	69,200	4,885	16

*SOURCE: South Carolina Statistical Abstract 1978

Per capita income by county for the period 1970 - 1975 is displayed in Table 4.11.

Table 4.11

PER CAPITA TRI-COUNTY AREA PERSONAL INCOME BY COUNTY, 1970-1975*

COUNTY	1970	1971	1972	1973	1974	1975	RANK IN STATE-1975
Anderson	3,091	3,279	3,662	4,078	4,445	4,596	13
Oconee	3,008	3,162	3,435	3,762	3,992	4,181	22
Pickens	2,994	3,115	3,394	3,841	4,078	4,202	17

*Source: South Carolina Statistical Abstract 1977. Columbia: South Carolina Division of Research and Statistical Services, 1977.

Median family incomes for 1970 and 1976, with projections for 1980, for the three counties of Tri-County TEC's service area are displayed in Table 4.12 on the following page.

Table 4.12

MEDIAN FAMILY INCOME*

COUNTY/REGION	1970	1976	1980
Anderson	8,102	11,825	13,967
Oconee	7,553	11,193	13,323
Pickens	8,114	12,603	15,246
Appalachian Region	8,234	12,291	14,588

*Source: Appalachian Statistics, March, 1978.

In Table 4.13 the percentages of change between 1970 - 1976 in per capita income of incorporated places in the tri-county area are displayed. Among the three counties, per capita income made impressive gains in Pickens County, where five towns experienced increase of more than 10 per cent. No town in Anderson or Oconee Counties experienced a gain of more than that amount.

Table 4.13

PER CENT OF CHANGE IN PER CAPITA INCOME OF INCORPORATED PLACES IN THE TRI-COUNTY AREA, 1970-1976*

City/Town	Per Cent Change	City/Town	Per Cent Change
Anderson	3.7	Pickens	6.3
Belton	1.6	Salem	-1.3
Central	5.4	Seneca	4.9
Clemson	27.5	Six Mile	13.0
Easley	12.7	Starr	-4.2
Honea Path	6.2	Walhalla	-4.9
Iva	-6.6	Westminster	9.4
Liberty	10.2	West Pelzer	7.0
Norris	19.8	West Union	-8.0
Pelzer	6.9	Williamston	.1
Pendleton	7.5		

*SOURCE: 1978 South Carolina Statistical Abstract.

Per capita income is measured by totaling the before-tax personal income of everyone in a county or metropolitan area and by dividing it by every man, woman, and child within the jurisdiction.

The gap between South Carolina and national average income is presently narrowing; however, it remains noticeable. For example, according to figures released in June 1979, by the Commerce Department, the 1977 per capita income of South Carolinians was $5,639, contrasting to the national figure of $7,026. Thus, the state's average is 80.3 per cent of the 1977 national per capita income. Within Tri-County TEC's service area, county 1977 per capita income were as follows: Anderson, $5,947; Oconee, $5,219; and Pickens, $5,559. Anderson County's average of $5,947 ranked 8th among all counties of South Carolina. It should be noted that per capita income of none of the counties in South Carolina equaled the national income average.[1]

According to the 1978 edition of the South Carolina Statistical Abstract, the per capita income of South Carolinians increased by 90.7 per cent between 1970 and 1977. Total personal income increased by 111.1 per cent during the same period. The civilian labor force of South Carolina increased by 28.1 per cent between 1970 and 1977. Nonfarm wage and salary employment increased by 28.0 per cent in the same period. Whereas manufacturing employment overall increased by 11.6 per cent in the state between 1970 and 1977, employment in textile related manufacturing increased only by .5 per cent during the same period.

According to the 1978 South Carolina Statistical Abstract, the total personal income of South Carolina citizens increased by 71 per cent between 1972 and 1977. In the nation as a whole the increase was 62 per cent, and in the Southeast the increase was 70 per cent; therefore, between 1972 and 1976 the total personal income of South Carolina citizens increased to a greater percentage than that of citizens in the Southeast and in the nation as a whole. Between 1976 and 1977, total personal income in South Carolina increased by 10 per cent.

According to the U. S. Department of Commerce, per capita personal income of South Carolina citizens in 1976 was $5,628, an amount that was 81 per cent of the national average of $7,019.

According to the U. S. Department of Commerce, total personal income increased in Anderson County 12.5 per cent between 1975 and 1976; in Oconee County, total personal income increased by 13.9 per cent in the same period; and in Pickens County the increase was 13 per cent.

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[1]The Greenville News, June 15, 1979.

OVERVIEW OF TRI-COUNTY EMPLOYMENT AND ECONOMIC CONDITIONS, 1978 to the Present

Despite some textile manufacturing slowdowns in January 1978 and curtailments in the apparel and chemical areas, other manufacturing production increased, producing a net gain of workers in the three-county area. In Anderson County, over-the-year slowdowns were counterbalanced by growth in electrical machinery, plastics, rubber, and stone, clay, and glass products, resulting in a net gain of 590 manufacturing jobs. New and expanded activities in nonmanufacturing firms provided 1,670 job slots. Largest payroll gains in Anderson County were in construction, trade, and government industries. In Oconee County an overall, over-the-year growth in manufacturing payrolls took place, despite slowdowns in some textile and apparel plants. Nonelectric machinery, lumber, and instrument production expanded as sales in these areas advanced in January 1978. The largest percent of nonmanufacturing gains was shared by trade and government establishments. The number of retail trade outlets increase in Oconee County; more money provided jobs for workers in various government projects. In Pickens County, over-the-year manufacturing growth out-distanced nonmanufacturing gains. Additions were diversified as production increased in electrical and nonelectrical marketing; primary metal; transportation equipment; and rubber and plastics plants. Textile and apparel payrolls held steady. Most of the advances in nonmanufacturing were attributed to new trade outlet openings and to more hiring so that government programs could be implemented at state and local levels.

In February 1978, nonmanufacturing payrolls increased in all three counties; all major industry groups witnessed gains, especially in the area of construction, trades, and government. Government funds were made available for training classes for unemployed persons and to furnish work experience projects that could increase family income while helping to improve services necessary for the operation of city and county functions.

Between February and March, 1978, resident employment climbed in all three counties in Tri-County Technical College's service area. Unemployment declined in Pickens and Oconee counties; however, it did not change very much in Anderson County as a result of textile curtailments. In Anderson County, 120 workers were hired during the month for construction projects at industrial and residential sites. A total of 40 textile layoffs took place in the county as a result of the curtailment of mill production. New building projects in Oconee and Pickens counties during the months resulted in the hiring of more construction workers.

Unemployment declined steadily in all three counties in April, 1978. With the exception of textile-related production, payrolls in all major industries also witnessed increases during the previous 12-month period. Import problems were recognized as the cause of textile slowdowns. In May, 1978, nonfarm wage and salary employment had surged upward for the fourth consecutive month, reaching a record high of 327,100 persons in what the South Carolina Employment Security Commission designates as Planning District I (Anderson, Cherokee, Greenville, Oconee, Pickens, and Spartanburg Counties).

In June, 1978, Anderson County experienced a healthy combination of economic activities. But seasonal changes in temporary layoffs brought about some reductions in employment within the three-county area. Loss of textile workers (attributed to foreign imports) occurred in the area during the month. Average weekly earnings were only about 4 percent ahead of July, 1977.

A drop in the number of textile employees occurred in Anderson County in August, 1978. Part of this decrease was attributed to the closing of some plants because of lack of orders and to old buildings and equipment, which some companies chose not to replace. During July and August, 1978 most job reductions in Oconee County were in the local government area as summer projects ended. These projects had provided job training for young people. Since August, 1977, employment declines were heaviest for apparel workers because some plants closed operations. In Pickens County, manufacturing employment showed some improvement in both durable and nondurable divisions as production in many areas expanded. During the previous years, nonfarm employment had climbed 6 percent--a reflection of diversified growth. Manufacturing plant expansions added slightly more workers than nonmanufacturing firms.

Unemployment declined in Anderson, Oconee, and Pickens counties between August and September, 1978. Agricultural activities were curtailed in the area, but the number of nonfarm wage and salary jobs increased. Average weekly earnings in manufacturing industries increased and was 9 percent higher than the same month one year ago (September, 1977). More stable payrolls in manufacturing industries resulted from slower turnovers in labor in the tri-county area. In Anderson County, expansion in the manufacturing sector were witnessed, especially in such product-areas as glass, electrical machinery, chemicals and rubber. September 1978, nonagricultural wage and salary employment reached 47,780 in Anderson County. In Oconee County, nonagricultural and salary employment reached 17,600, the highest level since January, 1978. In Pickens County the average quarterly, nonfarm wage and salary employment was 29,300 for four consecutive calendar quarters.

A continual decline in unemployment within the tri-county area was experienced between October and November, 1978, reflecting improved economic conditions. In Anderson County, the estimated net nonagricultural wage and salary change in November, 1978 was +340 from that of the previous month. Again in December, 1978, unemployment continued to decrease in all three counties; however, Oconee County's unemployment level was the highest in the six-county Planning District I. Average wage increased by 5 cents an hour in December as a result of overtime work in nearly all industrial divisions. From the previous year (December, 1977), nonagricultural wage and salary employment increased in Anderson County by 830, in Oconee County by 520, and in Pickens County by 100.[1]

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[1]"Upstate Update; Employment Trends in Planning District I." Columbia: South Carolina Employment Security Commission, Jan. 1978 to the present.

ANNUAL AVERAGE EMPLOYMENT (NONFARM AND SALARY BY COUNTY SOUTH CAROLINA), 1976*

COUNTY	TOTAL	MANUFACTURING	CONTRACT CONSTRUCTION	TRANSPORTATION & PUBLIC TRADES	WHOLESALE & RETAIL TRADES	FINANCE INSURANCE REAL ESTATE	SERVICES AND MISCELLANEOUS	GOVERNMENT
Anderson	44,330	23,500	2,130	1,090	7,270	1,110	5,100	4,100
Oconee	16,240	9,210	460	930	1,850	310	1,380	2,100
Pickens	27,100	13,200	1,000	300	3,330	600	2,200	6,500

*SOURCE: South Carolina Statistical Abstract 1977. Columbia: South Carolina Division of Research and Statistical Services, 1977.

EMPLOYMENT STATISTICS FOR TRI-COUNTY TEC'S SERVICE AREA, 1977, 1978, and 1979*

		Jan. 1977	Feb. 1977	March 1977	April 1977	May 1977	June 1977	July 1977	Aug. 1977	Sept. 1977	Oct. 1977	Nov. 1977	Dec. 1977	Jan. 1978	Feb. 1978
Anderson	Labor Force	54,850	55,240	55,480	56,310	57,260	58,090	57,560	58,840	58,470	58,400	57,670	56,650	56,650	56,830
	Employed	52,400	52,490	53,040	54,270	55,250	55,710	54,110	56,110	55,680	55,450	54,820	53,010	53,010	53,490
	Unemployed	2,450	2,750	2,440	2,040	2,010	2,380	3,450	2,730	2,790	2,950	2,850	3,640	3,640	3,340
	Percent Unemployed	4.5%	5.0%	4.4%	3.6%	3.5%	4.1%	6.0%	4.6%	4.8%	5.1%	4.9%	6.4%	6.4%	5.9%
Oconee	Labor Force	16,960	17,350	17,830	17,770	17,860	18,240	18,190	17,650	18,390	18,260	18,150	17,650	17,650	17,970
	Employed	15,860	16,260	16,760	16,870	16,980	17,300	16,210	16,790	17,540	17,400	17,290	16,580	16,580	16,940
	Unemployed	1,100	1,090	1,070	900	880	940	1,980	860	850	860	860	1,070	1,070	1,030
	Percent Unemployed	6.5%	6.3%	6.0%	5.1%	4.9%	5.2%	10.9%	4.9%	4.6%	4.7%	4.7%	6.1%	6.1%	5.7%
Pickens	Labor Force	30,800	31,300	31,500	31,600	31,700	32,000	32,300	32,200	32,300	32,300	31,800	31,700	31,700	32,000
	Employed	29,500	29,700	30,000	30,300	30,500	30,600	29,900	30,700	30,900	30,700	30,500	30,200	30,200	30,500
	Unemployed	1,300	1,600	1,500	1,300	1,200	1,400	2,400	1,500	1,400	1,600	1,300	1,500	1,500	1,500
	Percent Unemployed	4.2%	5.1%	4.8%	4.1%	3.8%	4.4%	7.4%	4.7%	4.3%	5.0%	4.1%	4.7%	4.7%	4.7%

		March 1978	April 1978	May 1978	June 1978	July 1978	Aug. 1978	Sept. 1978	Oct. 1978	Nov. 1978	Dec. 1978	Jan. 1979	Feb. 1979	March 1979	Average Percent Unemployed Jan. 1977-March 1979
Anderson	Labor Force	58,110	58,800	58,720	59,810	59,080	59,410	59,020	58,660	58,290	57,880	57,260	57,050	58,100	
	Employed	54,440	55,610	55,860	56,530	55,080	55,850	55,920	55,660	55,420	55,400	54,240	54,500	55,540	
	Unemployed	3,670	3,190	2,860	3,280	4,000	3,560	3,100	3,000	2,870	2,480	3,020	2,255	2,560	Anderson
	Percent Unemployed	6.3%	5.4%	4.9%	5.5%	6.8%	6.0%	5.3%	5.1%	4.9%	4.3%	5.9%	4.5%	4.4%	5.1
Oconee	Labor Force	18,300	18,480	18,670	18,820	18,120	18,570	18,970	19,140	18,770	18,630	18,470	18,480	18,820	
	Employed	17,300	17,580	17,720	17,640	16,600	17,320	17,720	17,760	17,600	17,580	17,180	17,280	17,720	
	Unemployed	1,000	900	950	1,180	1,520	1,250	1,250	1,380	1,170	1,050	1,290	1,200	1,100	Oconee
	Percent Unemployed	5.5%	4.9%	5.1%	6.3%	8.4%	6.7%	6.6%	7.2%	6.2%	5.6%	7.0%	6.5%	5.8%	6.1
Pickens	Labor Force	32,500	33,000	33,500	34,200	33,000	34,100	33,800	34,000	33,500	33,100	33,300	33,200	34,000	
	Employed	31,100	31,600	31,900	32,300	31,200	32,300	32,200	32,100	31,800	31,800	31,800	31,800	32,200	
	Unemployed	1,400	1,400	1,600	1,900	1,800	1,800	1,600	1,900	1,700	1,300	1,500	1,400	1,800	Pickens
	Percent Unemployed	4.3%	4.2%	4.8%	5.6%	5.5%	5.3%	4.7%	5.6%	5.1%	3.9%	4.5%	4.2%	5.3%	4.8

Source: Upstate Update. Columbia, S. C.: South Carolina Employment Security Commission, 1977-1978.

ESTIMATED NET CHANGE IN NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT IN THE TRI-COUNTY SERVICE AREA, (ANDERSON, OCONEE, AND PICKENS COUNTIES), 1978-1979*
(Rounded to nearest 10)

INDUSTRY/GROUP[1]	Number of Employees		
	January 1979	January 1978	Net One-Year Change
TOTAL	96,310	94,230	+ 2,080
MANUFACTURING	48,380	48,090	+ 290
DURABLE GOODS	14,980	15,510	- 530
Fabricated Metal Prod.	720	490	+ 230
Machinery, Exc. Electric	1,380	1,330	+ 50
Lumber & Wood Products	150	140	- 10
Other Durables[2]	12,730	13,550	- 820
NONDURABLE GOODS	33,400	32,680	+ 720
Food & Kindred Products	460	520	- 60
Textile Mill Products	21,080	21,080	0
Apparel & Other Textile Products	6,060	5,870	+ 190
Other Durables[3]	5,700	5,110	+ 590
NONMANUFACTURING	48,030	46,140	+ 1,890
CONSTRUCTION	4,030	4,200	+ 170
TRANSPORTATION & PUBLIC UTILITIES	2,740	2,510	+ 230
WHOLESALE & RETAIL TRADE	14,060	13,590	+ 470
FINANCE, INSURANCE, & REAL ESTATE	2,360	2,180	+ 180
SERVICES AND MISCELLANEOUS[4]	8,010	7,540	+ 470
GOVERNMENT	16,830	16,120	+ 710
Federal	660	630	+ 30
State	6,990	6,500	+ 490
Local	9,180	8,990	+ 190

*Nonfarm wage and salary employment estimates include all full and part-time wage and salary workers who were employed during the pay period including the 12th of the month. These estimates measure the number of jobs by industry and reflect employment by place of work. Therefore, these data are not strictly comparable with labor force data which represents persons (not jobs) by place of residence. In addition, proprietors, self-employed persons, workers in private households and unpaid family workers are excluded from the nonfarm wage and salary estimates. These estimates are projected from a first quarter 1978 benchmark. Totals may not add because of rounding.

[1]Industries are classified according to the Standard Industrial Classification Manual, 1972.

[2]Includes lumber and wood products; furniture and fixtures; stone, clay, glass, and concrete; primary metal industries; electrical and electronic machinery and supplies; transportation equipment; instruments and related products; and miscellaneous manufacturing.

[3]Includes paper and allied products; printing and publishing; rubber and plastic products; chemicals and allied products; petroleum refining; and leather products.

[4]Includes agricultural services, hunting and trapping; fisheries; mining and quarrying.

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deleted due to irrepro-
ducibility.

LABOR DEMAND AND SUPPLY, SELECTED OCCUPATIONS--SOUTH CAROLINA--FY 1979, PLANNING DISTRICT*

O. E. CODE	TITLE	ANNUAL DEMAND	INSTITUTIONAL SUPPLY				EMPLOYMENT SERVICE		
			VOC. ED.	TEC	FED/CETA	ANNUAL SUPPLY	APPLICANTS ACTIVE	OPENINGS UNFILLED 30 DAYS	ENTRY WAGE
01.0200	Agri. Supplies/Services	10	1			1	106	11	$2.90
01.0500	Horticulture	160	48	15		63	53	10	2.75
04.0600	Food Distribution	250	23			23	341	18	3.20
04.0800	General Merchandise	630	26			26	621	24	2.90
04.1300	Insurance	100	1	11		12	73	30	Comm.
09.0205	Inst. and Home Mgt. Serv.	210					607	10	2.65
14.0300	General Clerical	390	170	49	20	239	1,178	49	3.00
14.0500	Materials Support Occup.	150					452	71	3.00
14.0700	Steno., Secretarial	810		78	3	81	246	19	3.20
17.0302	Auto Mechanics	140	85	94		179	146	9	4.10
17.1004	Masonry	100	52	13	7	72	93	14	4.00
17.1007	Plumbing and Pipefitting	90	19	10		29	157	5	3.50
17.1099	Const. & Maint. Trades & Other	80		50		50	351	17	4.10
17.1300	Drafting	50	32	10		42	46	14	3.35
17.1500	Electronics Occupations	160	5	57		62	50	5	3.50
17.2305	Sheet Metal	40	31			31	125	55	3.00
17.2900	Quantity Food Occupations	500				15	1,027	60	2.80
17.3300	Textiles	330	46	31	53	130	3,405	80	3.00
17.3399	Industrial Sewing	560	49			49	711	80	2.90

*SOURCE: Occupational Training Needs, South Carolina and 10 Planning Districts. Columbia: South Carolina Employment Security Commission, 1978. pp. 51-60.

ANNUAL AVERAGE DEMAND FOR SELECTED OCCUPATIONS--
PLANNING DISTRICT I, SOUTH CAROLINA EMPLOYMENT*

O. E. Code	Title	EMPLOYMENT 1977	1979	1982	Growth	Replacement	Total Demand
01.0504	Landscaping	1,820	1,910	2,050	50	110	160
04.0200	Apparel and Access	1,560	1,830	2,040	100	90	190
04.0600	Food Distribution	5,050	5,310	5,620	110	140	250
04.0800	General Merchandise	8,510	8,990	9,700	240	390	630
04.1700	Real Estate	1,480	1,500	1,660	40	80	120
04.1900	Transportation Mgt.	2,270	2,390	2,580	60	60	120
04.2000	Retail Trade, Other	5,590	5,870	6,300	140	110	250
07.0301	Nurse, Registered RN	1,980	2,090	2,240	50	120	170
07.0302	Nurse, Practical LPN	1,030	1,080	1,160	30	80	110
07.0303	Nursing Aid	2,380	2,510	2,690	60	120	180
09.0201	Child Care Services	2,360	2,480	2,660	60	130	190
09.0205	Inst. & Home Mgt. Serv.	2,240	2,350	2,520	60	150	210
14.0102	Bookkeepers	4,690	4,930	5,290	120	170	290
14.0303	General Office Clerks	5,230	5,520	5,920	140	180	320
14.0702	Secretaries	14,260	14,990	16,080	370	450	820
14.0805	General Business	2,050	2,150	2,310	50	50	100
16.0105	Chemical Technology	1,450	1,520	1,640	40		40
16.0108	Electronic Technology	240	270	280	10	20	30
16.0111	Industrial Technology	820	870	930	20	10	30
16.0113	Mechanical Technology	750	790	840	20	10	30
17.0302	Mechanics	2,260	2,370	2,540	60	80	140
17.1001	Carpentry	6,650	6,990	7,500	170	210	380
17.1002	Electricity	2,760	2,900	3,110	70	40	110
17.1003	Heavy Equipment Maint./Operator	2,450	2,560	2,770	60	50	110
17.1004	Masonry	2,420	2,550	2,740	60	40	100
17.1005	Paint & Decorating	2,790	2,930	3,140	70	90	160
17.1007	Plumbing and Pipefitting	1,750	1,840	1,980	50	40	90
17.1099	Constr. & Maint., Other	1,310	1,380	1,490	40	40	80
17.1500	Electronics	3,030	3,160	3,340	60	40	100
17.1600	Fabric Maint., Services	1,330	1,390	1,490	30	50	80
17.2302	Machine Shop	2,680	2,820	3,010	70	40	110
17.2303	Machine Tool Operation	2,540	2,670	2,870	70	20	90
17.2602	Cosmetology	1,550	1,630	1,750	40	60	100
17.2902	Cook/Chef	2,680	2,820	3,030	70	130	200
17.2904	Waiter/Waitress	4,030	4,230	4,540	100	140	240
17.3399	Industrial Sewing	10,650	11,200	12,010	270	290	560

*SOURCE: Occupational Training Needs, South Carolina and 10 Planning Districts. Columbia: South Carolina Employment Security Commission, 1978. pp. 38-50.

PROJECTED GROWTH BY MAJOR OCCUPATIONAL GROUP, UNITED STATES, 1972-85*
(in thousands)

Occupational Group	1972 Employment	Projected 1985 Requirements	Percent Change	Openings		
				Total	Growth	Replacement
Total	81,703	101,500	24.2	61,200	19,800	41,400
White-collar workers	39,092	53,700	37.3	38,800	14,600	24,200
Professional and technical workers	11,459	17,000	48.8	12,000	5,600	6,400
Managers and administrators	8,032	10,500	30.1	5,900	2,400	3,500
Salesworkers	5,354	6,500	21.3	3,800	1,100	2,700
Clerical workers	14,247	19,700	38.2	17,000	5,400	11,600
Blue-collar workers	28,576	32,800	14.7	13,800	4,200	9,600
Craft and kindred workers	10,[illegible]	13,000	20.2	5,300	2,200	3,100
Operatives	13,54[illegible]	15,300	13.1	7,200	1,800	5,500
Nonfarm laborers	4,217	4,500	5.9	1,300	200	1,000
Service Workers	10,966	13,400	22.2	8,500	2,400	6,100
Private household workers	1,437	1,100	-26.1	700	-400	1,100
Other service workers	9,529	12,300	29.0	7,800	2,800	5,000
Farm workers	3,069	1,600	-47.1	100	-1,400	1,500

*SOURCE: Occupational Outlook Quarterly (Winter 1974), 18:7.

SELECTED ACTIVE, NON-FEDERAL, HEALTH PROFESSIONALS BY COUNTY OF PRACTICE/EMPLOYMENT, 1978*

COUNTY	PHYSICIANS		DENTISTS		REGISTERED NURSES	LICENSED PRACTICAL NURSES	OPTOMETRISTS	OPTICIANS	CHIROPRACTORS	PODIATRISTS	PHYSICAL THERAPISTS	PHYSICAL THERAPY ASSISTANTS	DENTAL HYGIENISTS	DENTAL TECHNICIANS	DENTAL ASSISTANTS	PHARMACISTS	ASSISTANT PHARMACISTS	VETERINARIAN	PHYSICIANS' ASSISTANTS
	PRIVATE OFFICE	OTHER OR NOT STATED	PRIVATE OFFICE	OTHER OR NOT STATED															
Anderson	89	52	34	1	373	180	8		14	1	3	2	12	6	68	85	2	11	1
Oconee	24	7	13		117	62	5		4		3	2	4	3	16	25	2	3	2
Pickens	31	7	22		177	97	5	1	6			1	9	2	39	35	1	8	
Total	144	66	69	1	667	339	18	1	24	1	6	5	25	11	123	145	5	22	5

*SOURCE: 1978 South Carolina Statistical Abstract.

TRENDS AND DEVELOPMENTS

- The present-day economy of Anderson, Oconee, and Pickens counties is dominated by manufacturing activities. Manufacturing accounted for 50 per cent of the service area's employees, with textiles and apparel industries being the most important activity.

- The economic potential of the area has been enhanced by improvements in transportation and communication facilities, especially in the decades of the 1960's and the 1970's.

- Although the significance of agriculture in the area has declined since World War II, the three counties of Tri-County TEC's service area are still dotted with large and small farms, the products of which are primarily milk, wheat, and livestock.

- According to employment projections reported in the Occupation Outlook Quarterly (Winter, 1974)18:8, the national increase in all white-collar workers between 1972 and 1985 will be approximately 36 per cent. Professional and technical white-collar workers are projected to increase by 47 per cent; managers and administrators by 32 per cent; salesworkers by 24 per cent; and clerical workers by 38 per cent. In the blue-collar category, jobs for craft and kindred workers, operatives, and nonfarm laborers will also increase; however, changes in employment in these areas will not be as great as those for white-collar occupations.

- Proportionately, the area's total employment in the textile industry has declined dramatically in recent decades. As textile employment decreased, employment in nontextile manufacturing increased. Correspondingly, employment in trades and services has also increased. The demand for textile labor appears to be on the decline. From all indications, textile industries within Anderson, Oconee, and Pickens counties will continue to rely primarily upon existing, rather than upon innovative, technological advancements. Within nontextile industries, employment growth will continue to rise; therefore, increasing demands will be made for technical skills that are not currently widely available in the local labor market.

- According to a study commissioned by Liberty Life Insurance Company of Greenville, an influx of non-textile industry in the area will create new kinds of jobs and labor shortages. Hayne Hipp, chairman of Liberty Life, stated: "Textile employment will decline due to the need to improve labor productivity in an environment of rapidly rising wages. Employment in manufacturing industries other than textile and in trade and services will rise." Although the study pointed to the fact that blue-collar workers will be predominant in this geographical area through 1988, white-collar jobs will grow faster than blue-collar jobs; gains are expected to be made by professional and clerical workers. Growth in the following occupations within the next decade was also predicted, based upon the study: salesmen, male service workers, female executives, craftsmen, military personnel, and housewives.[1]

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[1]"Liberty Life Study Foreseen Non-Textile Industry Growth." Greenville News, March 9, 1979, p. 9-C.

- Since about 1970, women have joined the U. S. labor force in record numbers. Their entrance reflects social and economic changes in American communities. Furthermore, the presence of more women in the job market indicates the importance of women for the nation's labor supply. By 1970, more than one-third of all labor force participants were women. However, different patterns of participation of women in the labor force exist among various kinds of residential areas.[1]

- Part-time employment has been spurred by the growth of the American economy, especially among service industries. Job opportunities have opened for both men and women, as well as for students and older workers. But the majority of the 13 million persons who work part-time (fewer than 35 hours per week) by choice in 1977 were adult women (age 20 and over). Of every 20 voluntary part-timers, 11 were women, 4 were men, and 5 were teenagers.[2]

- During the first half of 1978, U. S. unemployment dipped to 5.7 per cent (by June)--the lowest rate in almost 4 years; employment as a proportion of the working-age population reached a record high of 58.9 per cent.[3]

- Based upon a national survey among freshmen in two-year, publicly supported colleges, approximately 30 per cent of these students are employed part-time and three percent are employed full-time. Slightly more than 37 per cent of these students claimed that they were not receiving parental aid to finance their education.[4]

- Barring the occurrence of cataclysmic events, such as a war or a severe, prolonged economic depression, the employment outlook in the near future (i.e., to 1985) appears to be stable--that is, the relatively high employment level that presently exists will be maintained.

- G. William Dudley, Jr., pointed out on February 9, 1979, that "TEC is probably at its most critical point since 1961 as we are entering a second industrial training phase in which more sophisticated training will be required, and in some instances we may even have to retain our instructors."[5]

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[1]Lillian Chenoweth and Elizabeth Maret-Havens, "Women's Labor Force Participation--A Look at Some Residential Patterns," Monthly Labor Review 101(March, 1978):38.

[2]Carl Leon and Robert W. Bednarzik, "A Profile of Women on Part-time Schedules," Monthly Labor Review 101(October, 1978):3.

[3]Philip L. Rones, "Employment and Unemployment During the First Half of 1978," Monthly Labor Review (August, 1978):3.

[4]The American Freshman: National Norms for Fall 1978, by Alexander W. Astin and Others. Los Angeles: Laboratory for Research in Higher Education, University of California, Los Angeles, 1978. pp. 58-60.

[5]Minutes of Presidents and Directors Meeting, State Board for Technical Comprehensive Education, Columbia, S. C., January 9, 1979.

The per capita values of manufacturing products by county are listed in Table 4.14. In 1977 Oconee County ranked first in the state in terms of per capita value of manufacturing products. The total value of products manufactured in Oconee in 1977 was $757,547,000; the population was 45,400. Therefore, the per capita value of manufacturing products in Oconee County in 1977 was $16,686. On the other hand, the per capita value of manufacturing products in Anderson was $8,543--approximately half of the same value in Oconee County. Pickens County ranked 16th in the state with a per capita value of manufacturing product of $7,490.

Table 4.14

PER CAPITA VALUE OF MANUFACTURING PRODUCTS, 1977 BY COUNTY*

COUNTY	TOTAL VALUE (THOUSANDS)	POPULATION	PER CAPITA	RANK
Anderson	996,086	116,600	8,543	11
Oconee	757,547	45,400	16,686	1
Pickens	519,067	69,300	7,490	16

*Rankings of the Counties and School Districts of South Carolina, 1977-78 (Columbia, S. C. Department of Education, Office of Research, 1979), p. 43.

Total annual payrolls are listed in Table 4.15 for industries in Anderson, Oconee, and Pickens counties for the period 1970-1976. Among the three counties, Anderson County has ranked first, and in 1976 its industrial payroll was $323,230,000, followed by Pickens County ($157,563,000), and by Oconee County ($110,170,000).

Table 4.15

TOTAL ANNUAL PAYROLLS FOR INDUSTRIES BY COUNTY 1970-1976*
(In thousands of dollars)

COUNTY	1970	1971	1972	1973	1974	1975	1976
Anderson	171,933	187,430	223,055	252,803	283,987	281,846	323,230
Oconee	79,022	84,135	95,398	100,458	99,847	88,810	110,170
Pickens	82,284	86,292	120,680	145,948	159,456	159,329	157,563

*Source: South Carolina Statistical Abstract 1977. Columbia: South Carolina Division of Research and Statistical Services, 1977.

Table 4.16

PERCENTAGES OF NONAGRICULTURE WAGE AND SALARY EMPLOYMENT IN VARIOUS AREAS, 1977, BY COUNTIES*

	TRANSPORTATION, COMMUNICATION, & PUBLIC UTILITIES			SERVICES			GOVERNMENT			WHOLESALE & RETAIL TRADE			CONTRACT CONSTRUCTION			FINANCE, INSURANCE, REAL ESTATE		
COUNTY	Number	Percent	Rank	Number	Percent	Rank	Number	Percent	Rank	Number	Percent	Rank	Number	Percent	Rank	Number	Percent	Rank
Anderson (46,420)	1,200	2.6	31	4,300	9.3	21	5,770	12.4	43	7,810	16.8	23	2,340	5.0	16	1,130	2.4	19
Oconee (16,750)	930	5.6	7	1,060	6.3	36	2,480	14.8	36	1,960	11.7	36	560	3.3	33	320	1.9	32
Pickens (28,500)	300	1.1	46	2,000	7.0	33	6,700	23.5	12	3,500	12.3	35	1,000	3.5	32	500	1.8	37

*SOURCE: Rankings of the Counties and School Districts of South Carolina 1977-78 (Columbia, S. C. Department of Education, Office or Research, 1979), pp. 51-59.

Chapter 5

POPULATION

GENERAL

South Carolina's population growth was +11.6 percent during the period 1970-1977. This growth was 5.1 percent above the national average (6.4%) for the same period. In 1970 the actual total resident population of South Carolina was 2,259,000. The following population estimates and projections for South Carolina have been made:

a. Established 1977 population = 2,876,000
b. Established 1980 population = 2,976,000
c. Projected 1985 populatoin = 3,138,000
d. Projected 1990 population = 3,314,000

The percent of change in South Carolina's population between 1970-1980 is expected to be +14.9; between 1980-1990 it is expected to be +11.4. Forty-eight percent of the state's population lived in metropolitan areas in 1974.[1]

According to the Fact Book of Higher Education in the South, 1977-1978, in the period 1970-1977, South Carolina's population grew by 11.6 percent--5.1 percent above the national average (6.4 percent).

POPULATION OF THE SERVICE AREA

According to 1976 estimates of the population, the service area of Tri-County Technical College contains 198,900 people. A breakdown of the area's population by county is provided below in Table 2.1. In Table 2.2 on the following page, the populations of incorporated places in the institution's service area are provided for the years 1960, 1970, and 1975.

Table 5.1

ESTIMATED POPULATION AS OF JULY 1, 1976 BY COUNTY*

COUNTY	WHITE	NONWHITE	TOTAL	RANK
Anderson	94,400	21,400	116,600	6
Oconee	38,900	4,500	45,400	21
Pickens	65,600	3,600	69,300	14

*Rankings of the Counties and School Districts of South Carolina, 1977-78 (Columbia, S. C. Department of Education, Office of Research, 1979), p. 1.

[1]A Fact Book of Higher Education in the South 1977-78.

Table 5.2

POPULATION OF INCORPORATED PLACES IN
SOUTH CAROLINA 1970, 1960 & 1975

INCORPORATED PLACES	COUNTIES	1970	1960	PERCENT CHANGE	July 1, 1975
Anderson City	Anderson	27,556	41,316	-33.3	28,853
Belton Town	Anderson	5,257	5,106	3.0	5,396
Central Town	Pickens	1,550	1,473	5.2	1,640
Clemson Town	Pickens	5,578	1,587	251.5	7,151
Easley City	Pickens	11,175	8,283	34.9	12,161
Honea Path Town	Anderson	3,707	3,453	7.4	3,968
Iva Town	Anderson	1,114	1,357	-17.9	1,057
Liberty Town	Pickens	2,860	2,657	7.6	3,200
Norris Town	Pickens	757	594	27.4	850
Pelzer Town	Anderson	130	106	22.6	140
Pendleton Town	Anderson	2,615	2,358	10.9	2,843
Pickens Town	Pickens	2,954	2,198	34.4	3,151
Salem Town	Oconee	301	206	46.1	299
Seneca Town	Oconee	6,573	5,227	15.3	6,913
Six Mile Town	Pickens	361	218	65.6	417
Starr Town	Anderson	190	243	-21.8	188
Walhalla Town	Oconee	3,662	3,431	6.7	3,594
Westminster Town	Oconee	2,521	2.413	4.5	2,638
West Pelzer Town	Anderson	861	687	25.3	917
West Union Town	Oconee	388	443	-12.4	373
Williamston	Anderson	3,991	3,721	7.3	4,040

*Source: South Carolina Statistical Abstract 1977. Columbia: South Carolina Division of Research and Statistical Services, 1977.

Estimated populations per square mile of counties within Tri-County TEC's service area are listed in Table 5.3 below.

Table 5.3

ESTIMATED POPULATION PER SQUARE MILE, JULY 1, 1977 BY COUNTY*

COUNTY	AREA	POPULATION	DENSITY	RANK
Anderson	749	116,600	155.7	6
Oconee	654	45,400	69.4	22
Pickens	492	69,300	140.9	8

*Rankings of the counties and School Districts of South Carolina, 1977-78 (Columbia, S. C. Department of Education, Office of Research, 1979). p. 18.

The Appalachian Region of South Carolina is comprised of the following counties: Anderson, Cherokee, Greenville, Oconee, Pickens, and Spartanburg. The combined population of this region in 1970 was 656,447, or 25.34 percent of the state's population.

In the Tri-County TEC service area, 36.4 percent of the population is urban. A breakdown by counties is provided in Table 5.4.

Table 5.4

PERCENT OF POPULATION CLASSIFIED AS URBAN, 1970 BY COUNTY*

COUNTY	URBAN POPULATION	PERCENT URBAN	RANK
Anderson	43,131	40.9	14
Oconee	12,210	30.0	28
Pickens	22,550	38.2	18

*Rankings of the Counties and School Districts of South Carolina, 1977-78 (Columbia, S. C. Department of Education, Office of Research, 1979), p. 14.

Relative to the population in other regions, the Southern population is characterized as being more rural and more poverty stricken. Moreover, the poor in the South, who accounted for 44 percent of the total of the nation, are more likely to be employed than those in other regions.[1]

Table 5.5

PERCENT CHANGE IN URBAN POPULATION, 1960-1970 BY COUNTY*

COUNTY	1960 URBAN POPULATION	1970 URBAN POPULATION	DIFFERENCE	PERCENT	RANK
Anderson	53,574	43,131	-10,443	-19.5	41
Oconee	8,658	12,210	3,553	41.0	8
Pickens	10,940	22,550	11,610	106.1	3

*Ibid., p. 16.

[1]Vernon M. Briggs, Jr., Brian Rungeling, and Lewis H. Smith, "Welfare Reform and the Plight of the Poor in the Rural South," Monthly Labor Review 101(April, 1978):28.

Population of the three counties according to various age groups is provided in Table 5.6 through 5.8.

Table 5.6

PERCENTAGE OF POPULATION 65 YEARS OF AGE AND OVER, 1970 BY COUNTY*

COUNTY	65 & OVER	PERCENT	RANK
Anderson	9,227	8.7	15
Oconee	3,546	8.7	15
Pickens	4,449	7.5	30

*Rankings of the Counties and School Districts of South Carolina, 1977-78 (Columbia, S. C. Department of Education, Office of Research, 1979), p. 6.

Table 5.7

PERCENTAGE OF POPULATION UNDER 18 YEARS OF AGE, 1970 BY COUNTY*

COUNTY	UNDER 18	PERCENT	RANK
Anderson	35,713	33.9	42
Oconee	14,162	34 8	37
Pickens	18,626	31.6	46

*Ibid., p. 10.

Table 5.8

POPULATIONS OF COUNTIES IN THE SERVICE AREA BY AGE GROUP (April 1, 1970)*

COUNTY	TOTAL ALL AGES	UNDER 5 YRS.	5-13 YEARS	14-17 YEARS	18-20 YEARS	21-44 YEARS	45-64 YEARS	65 AND OVER
Anderson	105,474	8,981	18,685	8,047	5,226	32,522	22,786	9,227
Oconee	40,728	3,598	7,360	3,204	1,901	12,976	8,143	3,546
Pickens	58,956	4,758	9,666	4,202	5,678	19,259	10,944	4,449

*Source: 1978 South Carolina Statistical Abstract.

ANDERSON COUNTY

In relation to population size, an estimate was made in 1976 that Anderson County ranked 6th in the state, with a total population of 115,800 persons (94,400 whites and 21,400 nonwhites).[1]

At the time of the 1970 census of the population, 33.9 percent of Anderson County's population was under 18 years of age. At the same time, 57.4 percent of the county's residents were included within the 18-to-64-years age bracket. Among South Carolina counties, Anderson ranked 15th in the number of people who were 65 years of age and over (e.g., 3,546 people, or 8.7 percent of the county's population). The percentage of nonwhites in the county was 18.2, and 40.9 percent of Anderson County's population was classified ar urban. Between 1960-1979, the county's urban population changed by -19.5 percent (10,443 people).[2]

Table 5.9

The 1970 population and 1976 and 1980 estimates of the populations for each Anderson County municipality are as follows:

POPULATIONS OF COMMUNITIES OF ANDERSON COUNTY*

Municipality	1970	1976	1980
Anderson	27,556	30,438	32,202
Belton	5,257	5,491	5,659
Honea Path	3,707	4,213	4,564
Iva	1,114	1,126	1,136
N. Pelzer	1,202	1,055	1,073
Pendleton	2,615	2,867	3,097
Piedmont	2,242	2,463	2,650
Williamston	3,991	4,246	4,513

*Source: Appalachian Statistics, March, 1978.

[1]South Carolina, State Budget and Control Board, Division of Research and Statistical Services, "South Carolina Provisional Estimates of Population by Race and County, July 1, 1976."

[2]United States Census, 1970, Series PC(1)-A-A2.

OCONEE COUNTY

In size of population, an estimate was made in 1976 that Oconee County ranked 21st in the state, with a total population of 43,400 persons (38,900 whites and 4,500 nonwhites).[1]

At the time of the 1970 census of the population, 34.8 percent of Oconee County's population was under 18 years of age; 56.5 percent fell within the 18-to-64-years of age bracket; and 8.7 percent of the population was 65 years of age and over. In 1970, Oconee County's nonwhite population totaled only 4,082 (10.0 percent); the county ranked 45th in the state insofar as number of nonwhites are concerned. The urban population of Oconee County in 1970 was 12,210 (30.0 percent), having increased by 41.0 percent between 1960 and 1970.[2]

In 1976, Oconee County's estimated population per square mile (density) was 66.4.[3]

Table 5.10

The 1970 population and 1976 and 1980 estimates of the populations for each Oconee County municipality are as follows:

POPULATIONS OF COMMUNITIES OF OCONEE COUNTY*

Municipality	1970	1976	1980
Seneca	6,027	7,264	8,022
Utica	1,299	1,307	1,312
Westminster	2,521	2,681	2,838
Walhalla	3,662	3,699	3,774

*Appalachian Statistics, March 1978.

[1]South Carolina, State Budget and Control Board, Division of Research and Statistical Services, "South Carolina Provisional Estimates by Race and County, July 1, 1976."

[2]United States Census, 1970, Series PC(1)-A-A2.

[3]South Carolina, State Budget and Control Board, Division of Research and Statistical Services, "South Carolina Provisional Estimates by Race and County, July 1, 1976."

PICKENS COUNTY

Insofar as population size is concerned, Pickens County's estimated 1976 population was 69,200 persons (65,600 whites and 3,600 nonwhites), and among all counties of the state, Pickens County ranked 14th in population between the 1960 and 1970 U. S. Census of Population, Pickens County's population increased by 12,926 persons (28.1 percent). The percentage under 18 years of age in 1970 was 31.6; the percentage within the 18-to-64-years of age bracket was 60.9; and 7.5 percent of the population was 65 years of age and over. The urban population of the county in 1970 was 22,550 (38.2 percent), giving the county a ranking of 18 among other counties of the state. Between 1960 and 1970, the county's urban population increased from 10,940 to 22,550 (106.1 percent), giving the county a 3rd place rank in the state insofar as urban population is concerned. The 1976 estimated population per square mile (density) of the county was 140.7.[1]

Table 5.11

The 1970 population and 1976 and 1980 estimates of the populations for each Pickens County municipality are as follows:

POPULATIONS OF COMMUNITIES OF PICKENS COUNTY*

Municipality	1970	1976	1980
Arial	1,150	1,274	1,345
Central	1,550	1,705	1,753
Clemson	5,578	6,676	6,927
Easley	11,175	12,400	13,250
Liberty	2,860	3,636	3,594
Pickens	2,954	2,913	2,861

*Appalachian Statistics, March 1978.

[1]South Carolina, State Budget and Control Board, Division of Research and Statistical Services, "South Carolina Provisional Estimates by Race and County, July 1, 1976."

Chapter 6

INTERVIEW AND QUESTIONNAIRE RESULTS

The survey instruments used in the Employer Needs Assessment are provided in Appendices A and B at the end of this report. In the present chapter, replies to all interview questions and/or items on the printed questionnaire are summarized. Altogether, representatives of a total of 469 firms responded to survey questions (N=469). Responses to all fixed-alternatives answers were tabulated and converted into percentages, all of which are provided on pages 88-114 for each item included in the "Questionnaire for Business and Industry." For the reader's ease of interpretation, narratives have also been prepared to describe characteristics of responses. Moreover, bar graphs and pie charts are provided to display most of the interview and questionnaire data.

Beginning on page 114 of the present chapter, results are provided of the "Occupational Inventory Checklist." That instrument was used by interviewers who visited major industries within the tri-county area. The checklist was designed especially for the Employer Needs Assessment Project so that measures of the following factors could be obtained:

1) the availability of the local supply of trained manpower for numerous occupational categories;

2) the number of persons currently employed in occupational categories who do not have minimum certification or education needed for the job;

3) the number of additional full-time personnel in selected occupational categories needed to provide optimum care for the present service level demanded by industry;

4) the approximate number of additional personnel needed by July 1985 for the anticipated service level;

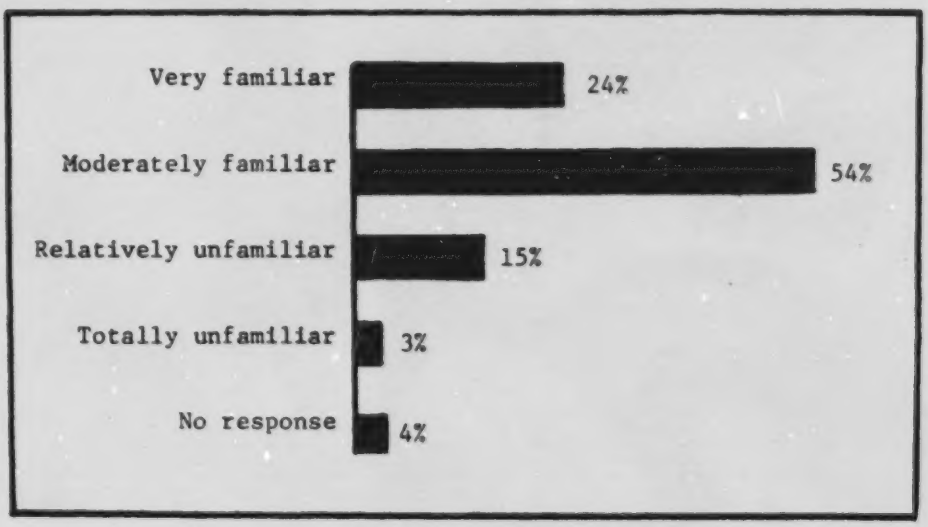
5) the degree to which the scope of work for various occupational categories will increase, remain constant, or decreases; and

6) whether TEC-trained persons had been employed to fill various occupational categories in local business and industries.

FAMILIARITY WITH VOCATIONAL AND TECHNICAL EDUCATION PROGRAMS

When asked to define the level of their awareness of various education programs in the tri-county area, 24 per cent of the respondents claimed to be very familiar, 54 per cent said that they were moderately familiar, 15 per cent claimed to be relatively unfamiliar, 3 per cent said that they were totally unfamiliar with vocational and technical education programs, and 4 per cent did not respond.

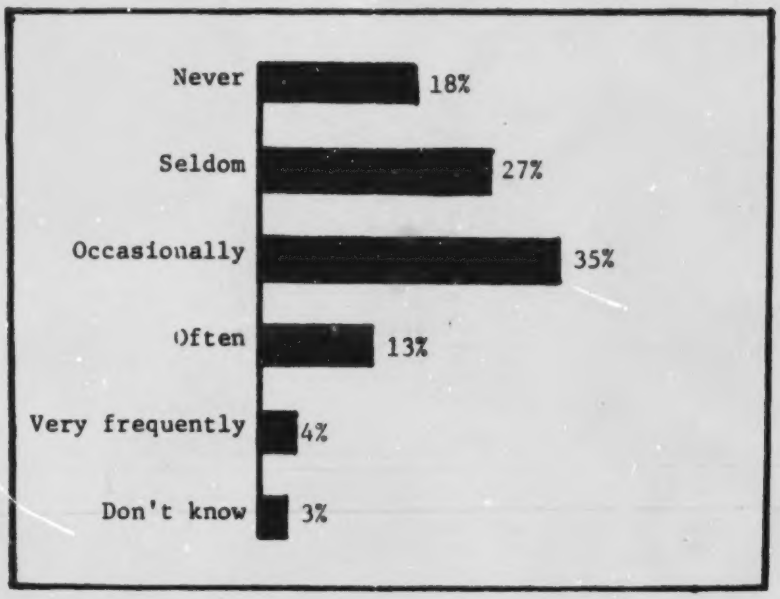
Question: How familiar are you with the vocational and technical educational programs offered at Tri-County TEC?



FREQUENCY WITH WHICH TEC-TRAINED EMPLOYEES ARE EMPLOYED BY BUSINESS AND INDUSTRY

In relation to the hiring of TEC-trained personnel, 18 per cent of the surveyed employers claimed that they never hired TEC personnel, 27 per cent said that they seldom did, and 35 per cent reported that TEC-trained employees were occasionally hired. On the other hand, 13 per cent of the employers said that they often employed Tri-County TEC former students and 4 per cent claimed to hire these employees very frequently. Three per cent responded "don't know" to this question.

Question: How frequently does your company or firm hire personnel who were trained at Tri-County TEC?

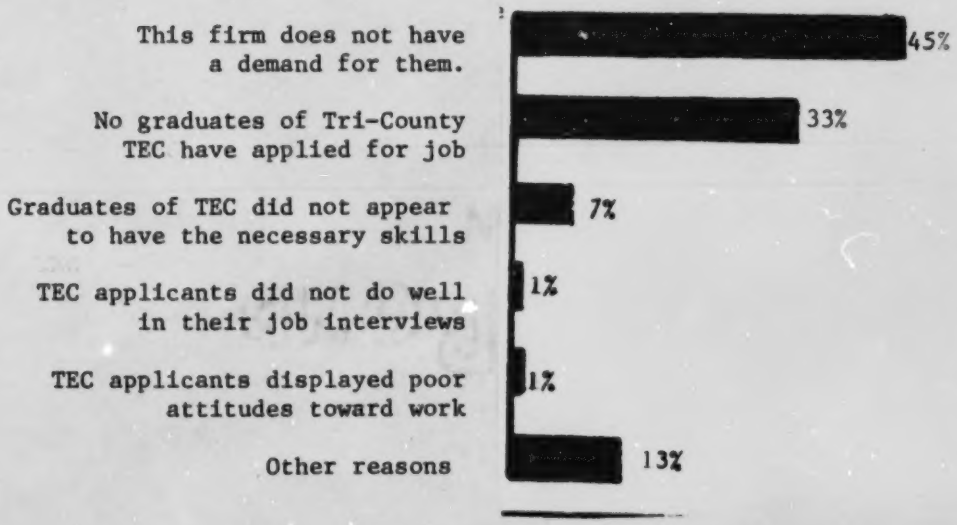


REASONS EMPLOYERS HAVE NOT HIRED PERSONS TRAINED BY TRI-COUNTY TEC

Among the surveyed businesses and industries 85 claimed that they have not employed persons trained by Tri-County Tech. Among these 85 firms, 45 per cent claimed that they did not have a demand for them, 33 per cent stated that no Tri-County TEC trained persons had ever applied for jobs in their firms, 7 percent claimed that graduates of Tri-County TEC did not appear to have the necessary skills, and only one per cent claimed both that TEC-trained applicants did not do well in their interviews or displayed poor attitudes toward work. Thirteen per cent gave other reasons among which the following were listed the most frequently:

--"The type of work performed in this firm does not attract TEC-trained people."
--"Our professional and para-professionals require at least 4 years of college."
--"Some TEC-trained people are not very production-minded."
--"We train our own employees here."
--"We need health-care trained personnel; TEC does not provide them for us."
--"Our turnover rate is very small."

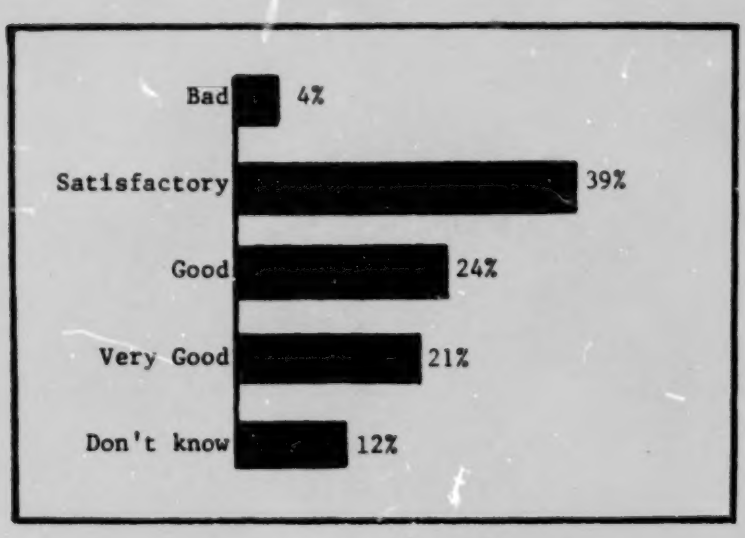
Question: If, to the best of your knowledge, your firm or industry has not employed persons trained by Tri-County TEC, please indicate the most applicable reason. (Should there be more than one reason, check other appropriate reasons for this particular question only.)


This firm does not have a demand for them.
45%
No graduates of Tri-County TEC have applied for job
33%
Graduates of TEC did not appear to have the necessary skills
7%
TEC applicants did not do well in their job interviews
1%
TEC applicants displayed poor attitudes toward work
1%
Other reasons
13%

PERFORMANCE OF REQUIRED JOB SKILLS

When asked to describe the overall level at which Tri-County TEC trained employees were prepared to perform required job skills, forty-five per cent of those persons interviewed said that the level was good or very good, and 39 percent said that it was satisfactory. Only 4 per cent characterized the performances level as bad, and 12 percent responded "don't know."

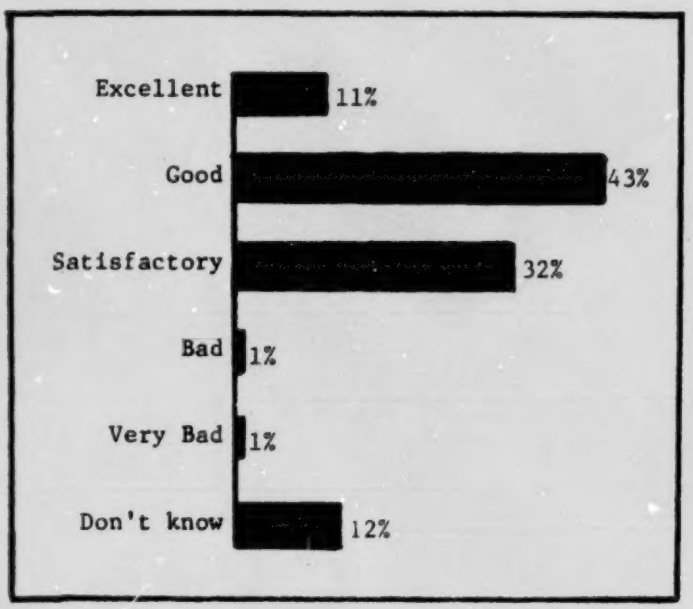
Question: If your firm has employed persons trained at Tri-County TEC, which of the following terms best describes the overall level at which you feel that they were prepared to perform required job skills?



WORK HABITS OF PERSONS TRAINED AT TRI-COUNTY TEC

Eleven per cent of the respondents in the survey classified the work habits of persons trained at Tri-County TEC as excellent, forty-three per cent classified them as good, and 32 per cent classified them as satisfactory. On the other hand, two per cent said that the work habits of these employees was either bad or very bad. Twelve percent of the participants in the survey responded "don't know" in relation to work habits of TEC-trained employees.

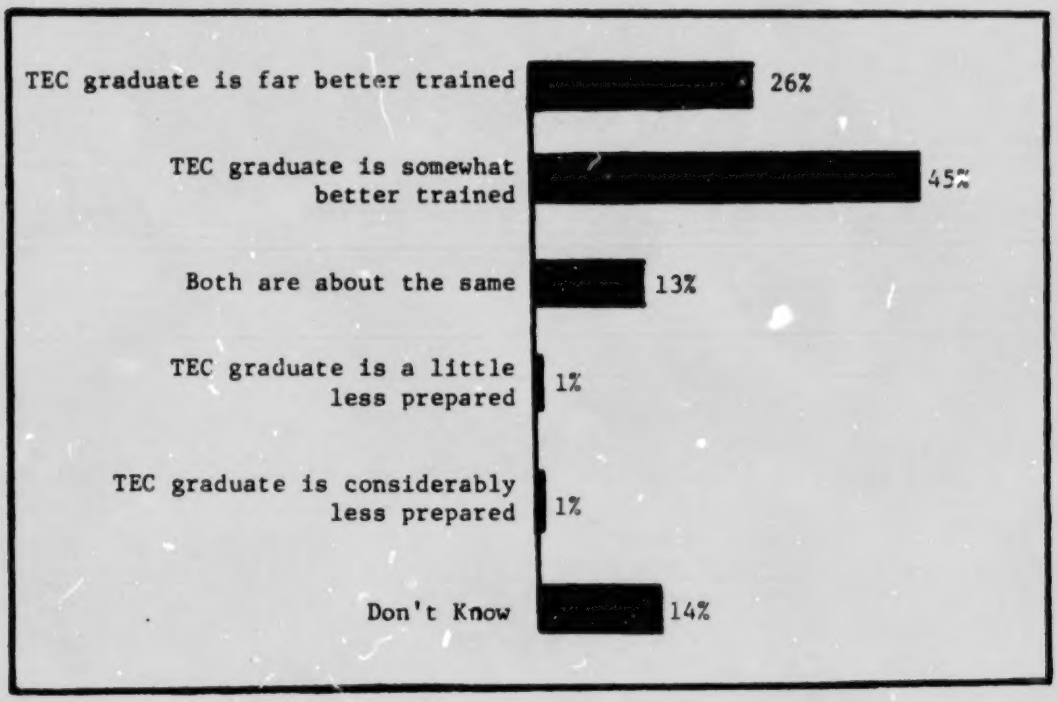
Question: Considered as a group, the work habits of persons trained at Tri-County TEC who are now or who have been employed by your firm or industry could best be described as:



LEVEL OF OCCUPATIONAL PREPARATION

In comparing the overall occupational preparation of TEC-trained personnel with the preparation of other employees without such training, 26 per cent of the respondents said that TEC graduates or former students are far better trained and 45 per cent said that they are somewhat better trained. Both TEC-trained and non-TEC-trained employees were rated by 13 per cent of the respondents as "about the same." Only two per cent of the employers rated the overall occupational preparation of TEC graudates as less or considerably less that other employees. Fourteen per cent responded "don't know" to the question.

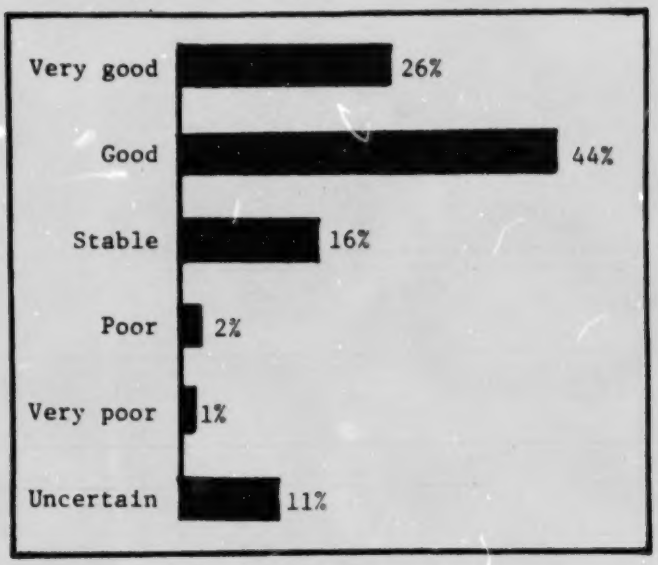
Question: How would you rate the overall occupational preparation of TEC-trained personnel in relation to that of other employees without such training?



FUTURE JOB OPPORTUNITIES FOR TEC-TRAINED EMPLOYEES

Requests for projections of job opportunities for TEC-trained personnel to the year 1985 elicited the following responses: 26 per cent felt that job opportunities would be very good, 44 per cent felt that they would be good, and 16 per cent predicted stable opportunities. On the other hand, a total of 3 per cent of the respondents felt that job opportunities in their firms would be either poor or very poor. Eleven per cent of the survey participants remained uncertain about this issue.

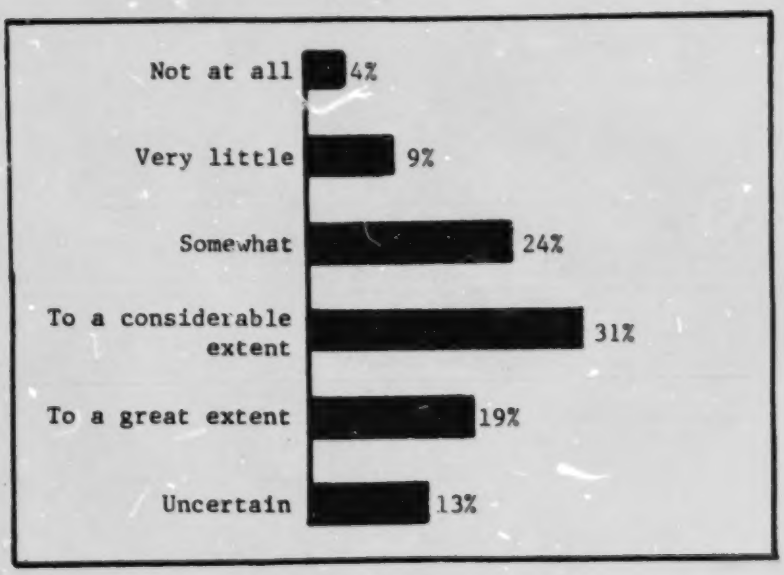
Question: Looking into the future to about 1985, what do you feel the overall job opportunities in your company will be for employees who have received various kinds of vocational or technical training at Tri-County TEC?



RELATIONSHIP OF VOCATIONAL TRAINING TO JOB PLACEMENT AND ADVANCEMENT

When asked to characterize the extent to which job placement and advancement had been affected by vocational training received by employees, 19 per cent felt that training affected opportunities to a very great extent, 31 per cent felt that the extent was considerable, and 24 per cent felt that the extent was "somewhat." Thirteen per cent of the participants were of the opinion that training had very little or no impact on increasing job opportunities. Thirteen per cent were uncertain about the relationship of vocational training to job placement and advancement.

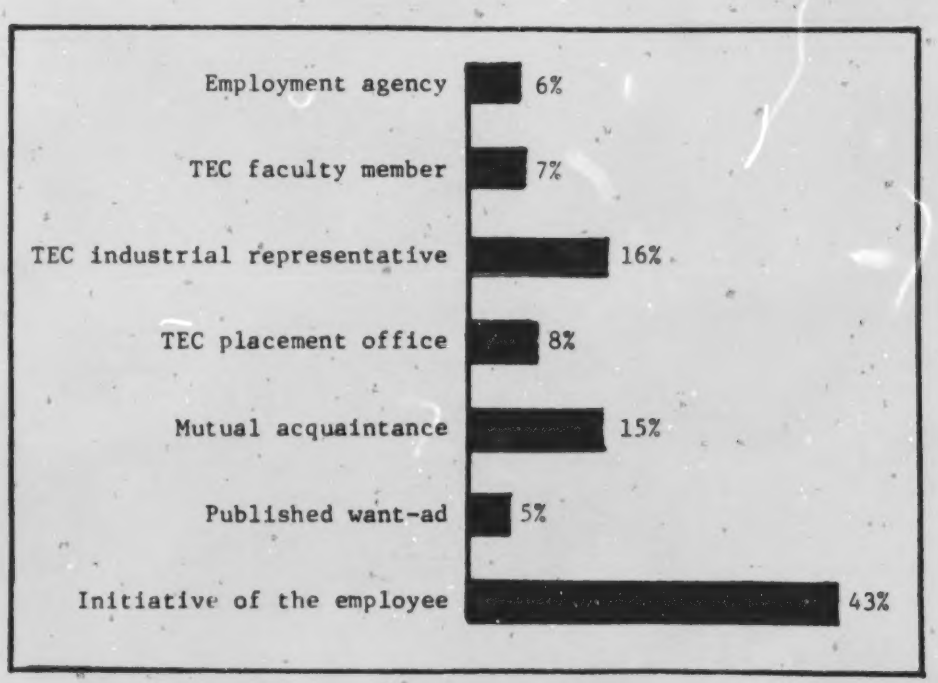
Question: To what extent has the training received by persons at Tri-County TEC increased their opportunities for job placement and advancement in your firm or industry.



SOURCES FOR IDENTIFICATION AND EVENTUAL EMPLOYMENT OF TEC-TRAINED EMPLOYEES

Among those businesses and industries which currently employ or that have employed TEC-trained personnel in the past, 43 per cent claimed that the initiative of the employee was the primary source for the identification of these personnel. Sixteen per cent interviewed said that they obtained TEC-trained personnel through TEC's industrial representative. Mutual acquaintances were credited by 15 per cent of the respondents as their source. The TEC placement office was listed by 8 per cent of the respondents, TEC faculty members by 7 per cent, employment agencies were listed by 6 per cent, and published want-ads by five per cent.

Question: If your firm has employed applicants who were trained at Tri-County TEC, what has been your primary source for their identification and eventual employment?



10. In your opinion, what new occupations will emerge in the foreseeable future for which training and education at the certificate or associate degree level might be required in your business or industry?

AUTOMOTIVE

Automatic Transmission
Front-End Alignment
Fuel Injection (2)
Solid-State Ignition
Seminars on late model cars
Computerized parts service
Automobile technicians
Diesel Mechanics (2)

HEAT/AIR CON.

Solar Energy Technicians (2)
Solar Heating/Hot Water
Energy conservation
Marketing Heat/AC Systems
Solar Energy Maintenance
Heating/Cooling Service Course
Solar Technicians

MEDICAL

Physical Therapists (2)
Dietary Workers
Nurses Aides
Associate RN Program
Physical Therapy Assistants
Advanced EMT/Paramedic (2)
Paramedics
Registered Nurses

LAW ENFORCEMENT

Juvenile Officer (2)
Criminal Investigator
Identification officer
Juvenile Deliquent Officer

DATA PROCESSING

Computer Technicians
Data Processing Mach. Tech.
Computer Operator Spec.(3)
Trained Computer Op.
Computer Training
Computer Programmer
Computer Prog. for batching
Data Processor (3)

ELECTRICITY/ELECTRONICS

Advance solid state television service
Electronics technicians (10)
General Electrician
Repairmen in electronics
Electricians

GENERAL

Traffic Manager
Supervisory
Salesmanship (technician background)
Truck drivers
Real Estate (2)
Building Construction
All-Round construction

MACHINE TOOL TECHNICIAN

Punch Press Set-Up Operator
Tool & Die Maker
Automatic Screw Machine Operator (2)
Machine Tool Programming
Machine/Prog. Operation & Maintenance
Machinists/Blue Pring

PRINTING TECH/RELATED FIELDS

Automatic Typing Machine Operator
Microfilm technicians operators
Graphics Technicians specialist

(10 Cont.)

GENERAL SCIENCE TECHNOLOGY

Engineering Technology
Structural Draftsmanship
Nuclear Physics
Engineering Technicians with Computer knowledge
Metal working technicians
Scientific lab technicians
Telecommunications technicians
Mechanical engineering technicians
Micro Biology lab technician
Chemical Mixers
Environmental technicians
Agricultural technicians
Farm management
Draftsmen (2)
Chemical Technicians
Engineers for Radio/TV
Microwave over mechanics

INDUSTRIAL GENERAL

Industrial Maintenance
Noise Pollution Technician
Industrial Hygiene (3)
Quality Control Technician(2)
Building Maintenance Technician
Sewing Machine Mechanic
Heat Treating/Metalurgy (2)
Production Control Technician
Plastics Injection molding
Plastics molding technology
Weavers
Graders/Inspectors

WORKSHOPS

Sewing machine operator
Real estate
Salesmanship
Plastics
Medical Assistant
Lab technician
Medical secretary
Truck drivers
Automobile mechanic
Surveyors
Data processing
Estate planning
EMT
Industrial lab technician
Industrial maintenance
Clerical Workers
Electronics technician
Weaving
Repairer (general)
Refregiration repair

INSTITUTES

Industrial lab technician
Industrial maintenance
Home appliance maintenance/control
Medical assistant
Lab technician
Medical Secretary
Solid state ignition
Automobile fuel injection
Mechanic Technician
Maintenance Mechanic
Human Relation
Marketing

11. **In what educational program areas and at what level of TEC support do you see the need for additional assistance to meet the needs of the personnel employed by your firm or industry?**

IN-SERVICE UPGRADING

Real Estate Broker
Salesmanship
Mathematics
Medical Assistance (2)
Lab Technicians (2)
Medical Secretary
Clerical (General)
Computer Operations
Law Enforcement
Agricultural Technology
Statistics
Water Treatment
Supervisory
Diesel Mechanics
Electrical Repairs
Veterinarian Assistance
Marketing
Medical Records
Supervisor/Human Relations
Machine Tool (2)
Automatic Screw Machine Operator
Human Relations
Electronics
Industrial Maintenance
Mechanical Maintenance
Mechanical Technology
Maintenance Workers
Welding
Air Conditioning
Police

SPECIALIZED COURSES

Machinists
Welding
Electronics (2)
Power Sewers
Basic Insurance
Practical Math
Draftsmen
Interior Decorator and Design
Plastics
Law Enforcement
Loom Fixing/Weaving (2)

SPECIALIZED COURSES

Body & Fender Mechanic
Automobile Paining
Automobile Tuning
Front-End/Brake Mechanic
Emmission Control
Imported Cars
Set-Up Molding
Supervisory (2)
Auto Electronics (2)
Propogation/Identification of Plants
Flower Arranging
Electrical Work (2)
Air Conditioning/Heating
Fuel Injection
Diesel Mechanic
Clerical Work
Welding
Juvenile Officer
Criminal Investigation
Loom Fixer
Weavers
Machine Set-up
Auto Mechanic
Electronics
Molding Technician
Animal Health
Landscape Design
Grafting/Budding Plants
Automatic Screw Machine Set-Up (2)
Human Relations (2)
Electronics Technician
Newscaster
Secretary
Bookkeeping
Foreman
Quality Control
Heat Treatment
Furnace Control
Industrial Lab Tech.
Industrial Maint (2)
Sewing Machine Mech. (4)
Mechanical Gauging
Tool & Die (3)
Plastics Set-Up
Supervisory (5)

SPECIALIZED COURSES (CONT.)

Insurance Clerk/Sales
Medical records
Statistics
Accounting
Crime Prevention
EMT/Paramedics
Electricians (2)
Weavers
Injection Molding
Lithographics
Maintenance Mechanic
Mechanic Technician
Maintenance Workers
Lumber Manufacturing
Lumber Inspector
Chemical Mixer
Instrument Repair
Patternmakers/Cloth Cutter
Clerical
Police

CERTIFICATE OR DEGREE PROGRAM

Electronics (4)
Sewing Machine Mechanic (2)
Animal Health
Body/Fender Mechanic
Automobile Mechanic
Automobile Tuning
Front-end/Brake Mechanic
Electrical Engineering Technician
Nuclear Operator
Supervisory
Diesel Mechanic
Electrician/Mechanic Control
Mechanical Engineer Technician
Surveying
Law Enforcement
Architect/Drafting
First-Aid and EMT
Registered Nurse
Physical Therapy
Crime Prevention
EMT
Industrial Lab Technician
Maintenance Technician
Manufacturing Engineering Technician
Water Treatment
Electrical Maintenance
Industrial Hygiene

CERTIFICATE OR DEGREE PROGRAM

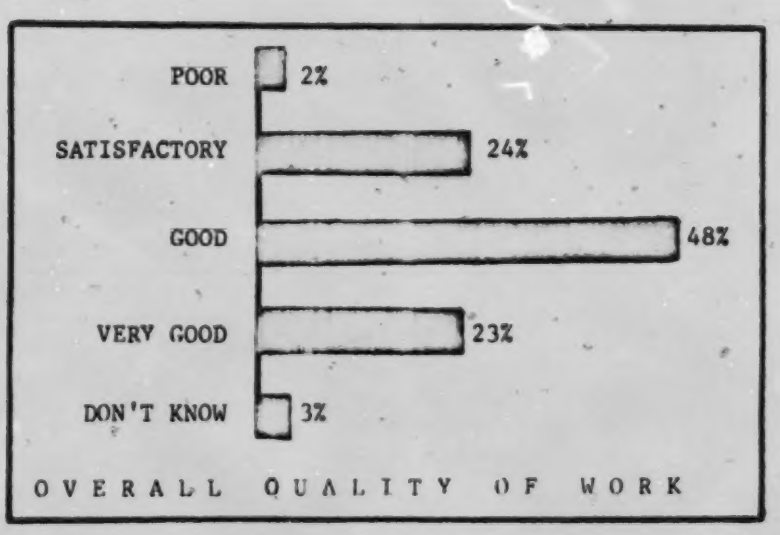
Industrial Maintenance
Plastics Injection Molding (2)
Electronics Technician
Lumber Mill Operator
Metalurgy
Industrial Electrician
Mechanic Maintenance
Mechanic Technician
Tool & Die Maker
Management Skills
Drafting
Loom Technicians

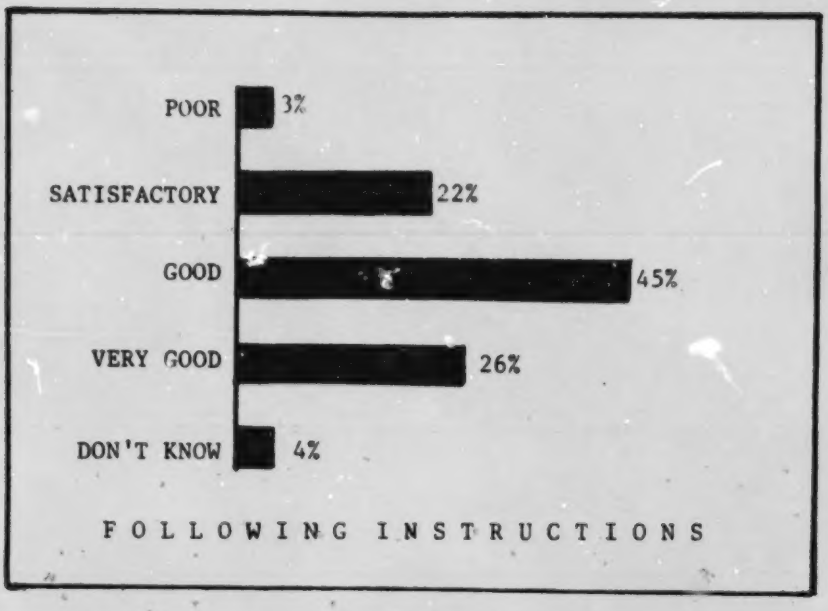
WORKSHOPS

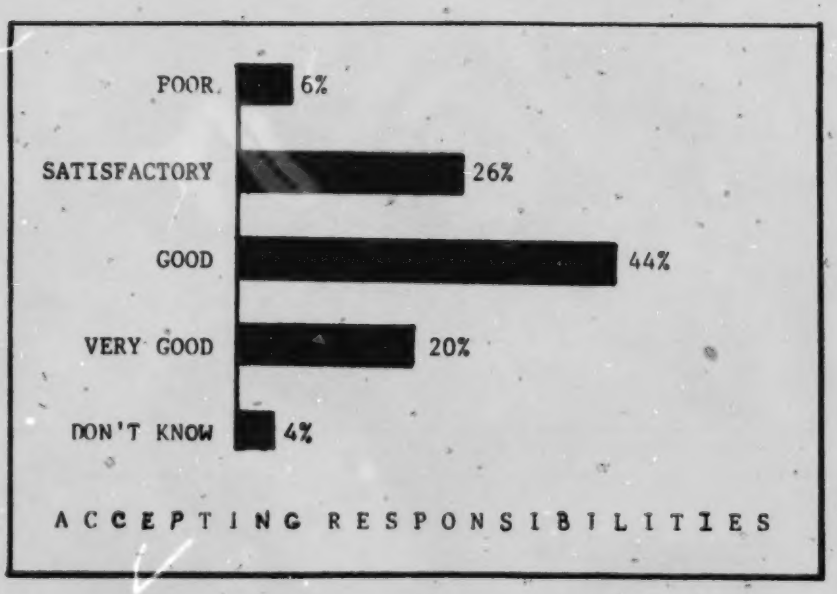
Body/Fender Mechanic
Automobile Tuning
Automobile Painter
Front End/Brake Mechanic
Time & Motion Study
Plant Propogation and Identification
Diesel Mechanic
Sheet Metal Fabrication
Electrical & Electronic Repairer
Air Conditioning/Heating
Fuel Injection
Diesel mechanic
Engine Analysis
Auto electrical and overdrive
Loom fixers (2)
Weavers
Electronics (2)
Molding Technician
Budding & Grafting Plants
Landscape design
Electricians
Supervisory
Machinists
Lumber Inspection
Lumber production
Welding
Air conditioning
Truck driving
Dispatching (truch)
Sewing machine operator
Sewing Machine Mechanic
Patternmakers/Cloth Cutters
Management Skills
Human Relations
Supervisory

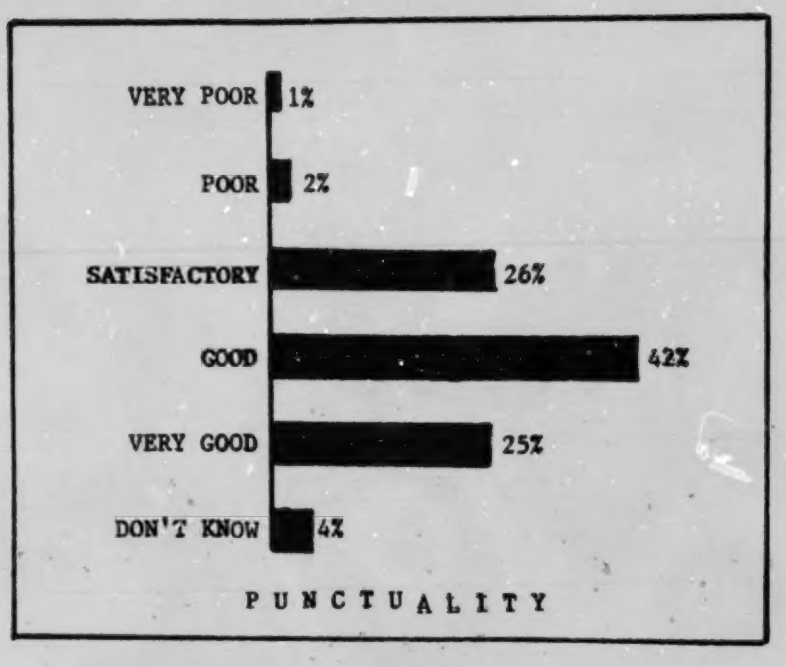
OVERALL EVALUATIONS OF TEC-TRAINED PERSONNEL EMPLOYED IN BUSINESS AND INDUSTRY

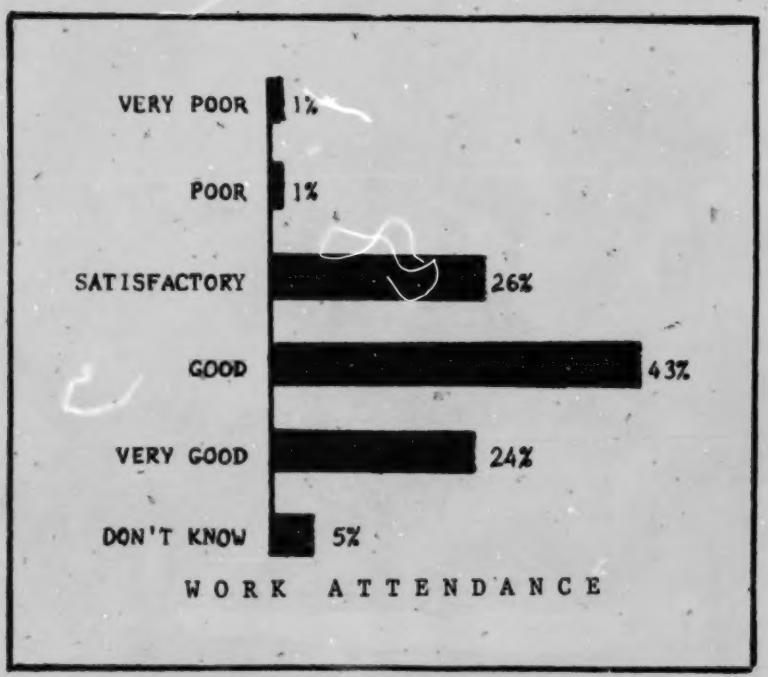
Respondents were asked to evaluate past and present TEC-trained personnel employed by their firms or industries. Employees were evaluated in relation to the following factors: overall quality of work, ability to follow instructions, acceptance of responsibility, punctuality, work attendance, willingness to learn, cooperation with co-workers, cooperation with management, attitudes toward work, personal appearance, and compliance with policies. In addition, respondents were asked to specify and to rank any other relevant qualities not listed in the questionnaire. The following fixed responses were given to respondents as descriptors for the evaluation of employees: good, very good, satisfactory, poor, very poor, and don't know. In the following section of this report, responses are depicted in graphical format. In all cases the overall trend of the collected data was toward positive evaluations. This is not to imply, however, that no unfavorable evaluations were made. The following illustrations graphically depict how TEC-trained personnel were evaluated by employers.

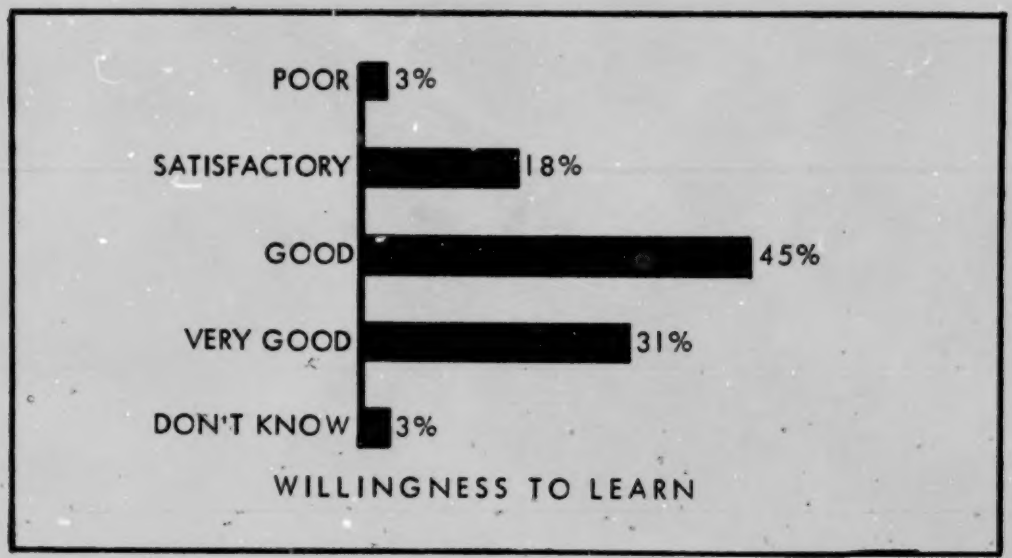


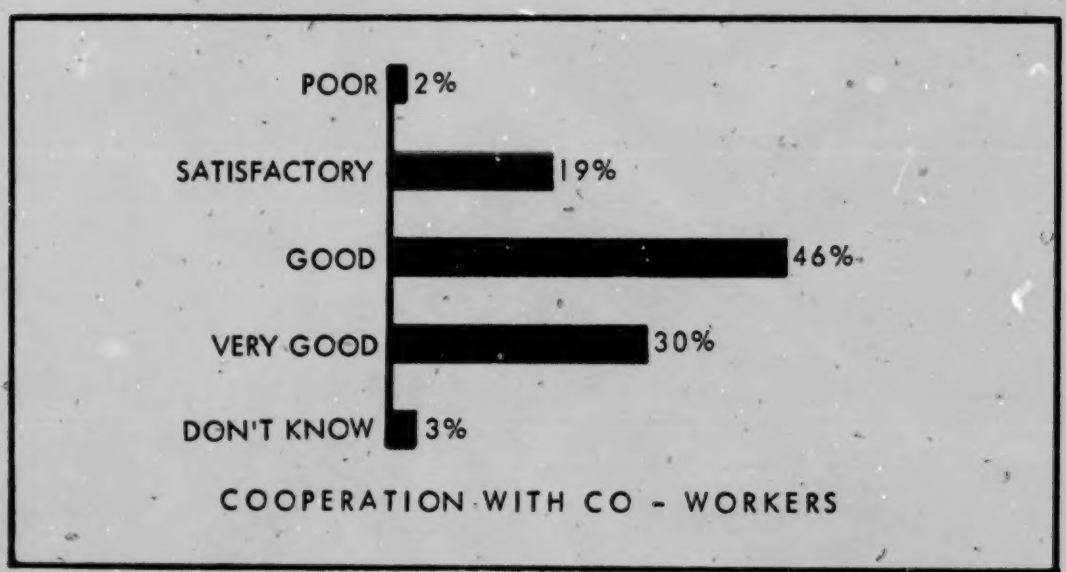

POOR
3%
SATISFACTORY
22%
GOOD
45%
VERY GOOD
26%
DON'T KNOW
4%
FOLLOWING INSTRUCTIONS

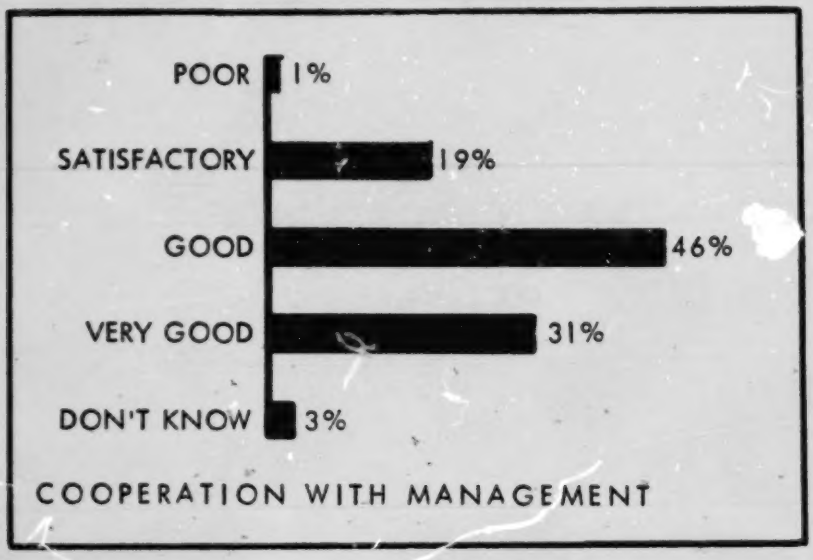

POOR
6%
SATISFACTORY
26%
GOOD
44%
VERY GOOD
20%
DON'T KNOW
4%
ACCEPTING RESPONSIBILITIES

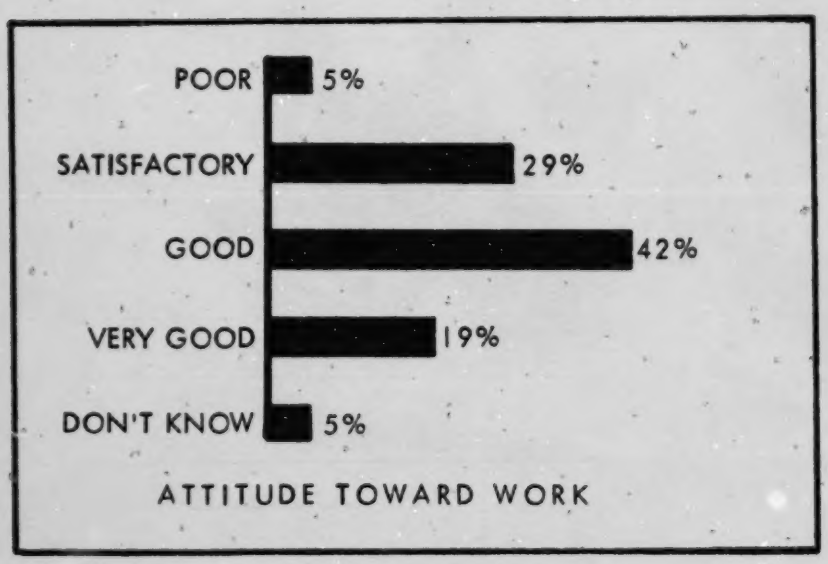

VERY POOR
1%
POOR
2%
SATISFACTORY
26%
GOOD
42%
VERY GOOD
25%
DON'T KNOW
4%
PUNCTUALITY

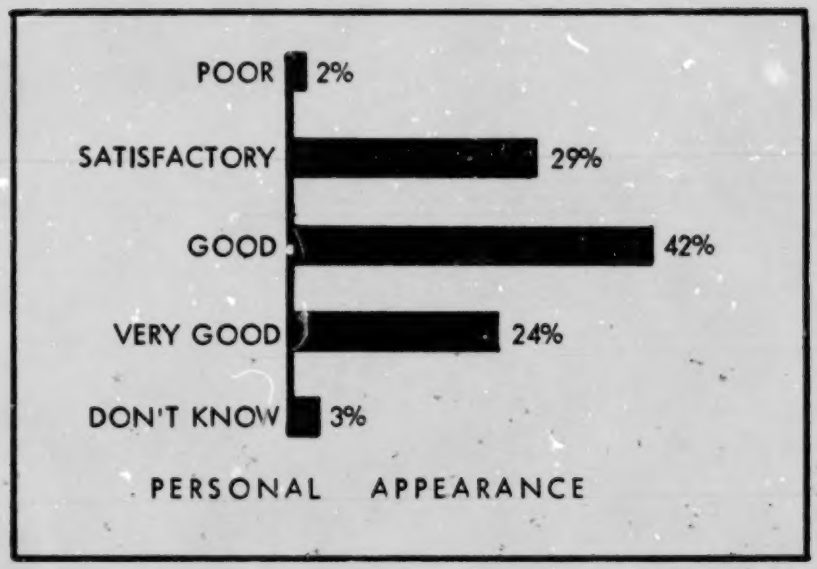

VERY POOR
1%
POOR
1%
SATISFACTORY
26%
GOOD
43%
VERY GOOD
24%
DON'T KNOW
5%
WORK ATTENDANCE

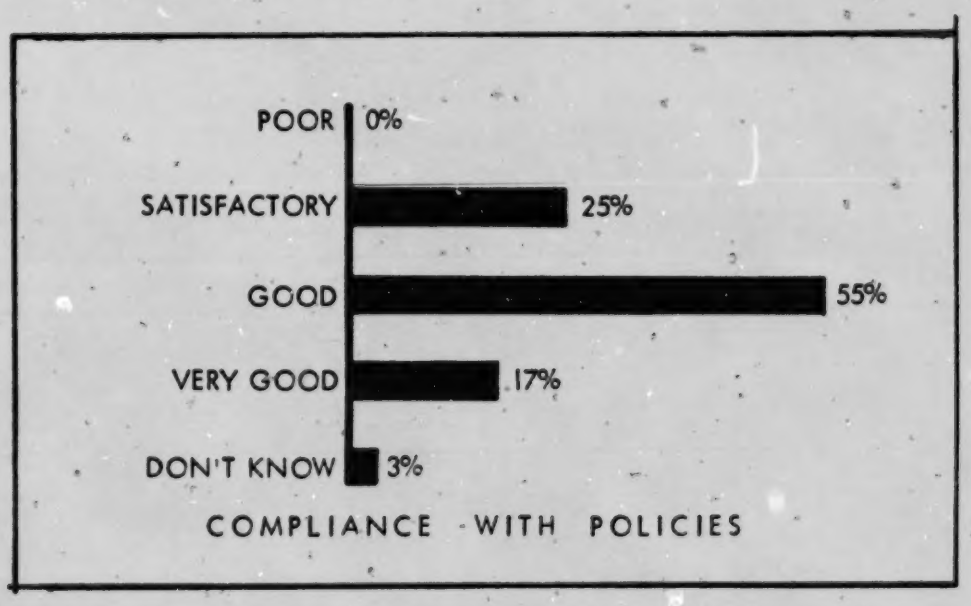

POOR
3%
SATISFACTORY
18%
GOOD
45%
VERY GOOD
31%
DON'T KNOW
3%
WILLINGNESS TO LEARN


POOR
2%
SATISFACTORY
19%
GOOD
46%
VERY GOOD
30%
DON'T KNOW
3%
COOPERATION WITH CO - WORKERS


POOR
1%
SATISFACTORY
19%
GOOD
46%
VERY GOOD
31%
DON'T KNOW
3%
COOPERATION WITH MANAGEMENT


POOR
5%
SATISFACTORY
29%
GOOD
42%
VERY GOOD
19%
DON'T KNOW
5%
ATTITUDE TOWARD WORK

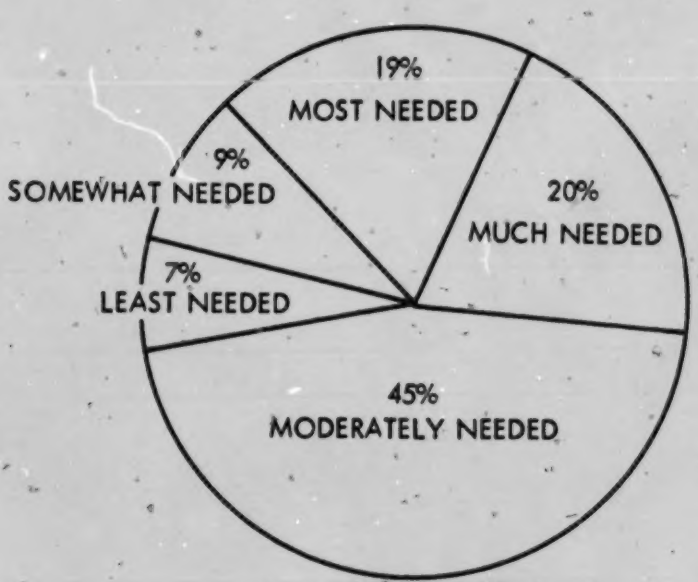

POOR
2%
SATISFACTORY
29%
GOOD
42%
VERY GOOD
24%
DON'T KNOW
3%
PERSONAL APPEARANCE


POOR
0%
SATISFACTORY
25%
GOOD
55%
VERY GOOD
17%
DON'T KNOW
3%
COMPLIANCE WITH POLICIES

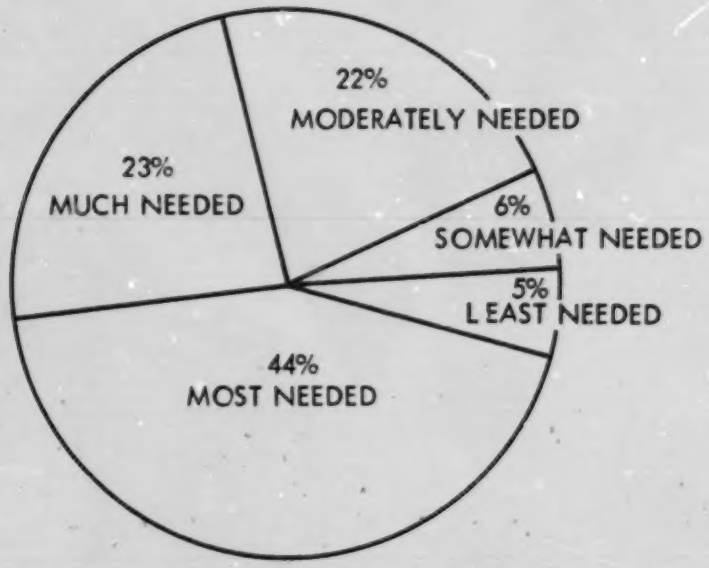
TECHNICAL AND VOCATIONAL SKILLS AND COMPETENCIES
EXPECTED BY BUSINESS AND INDUSTRY

To obtain an indication of the overall technical and vocational skills and competencies expected by all surveyed businesses and industries, respondents were asked the following question:

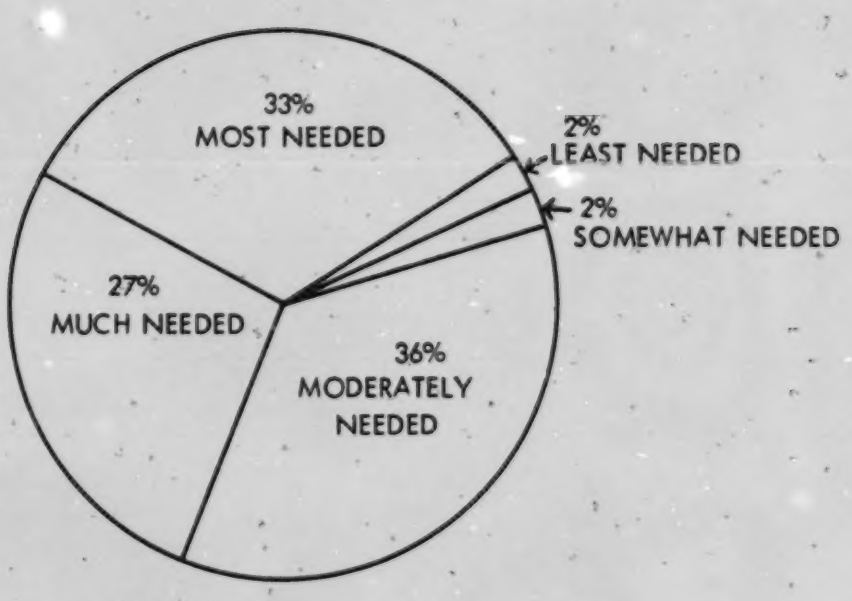
> The following list contains technical and vocational skills and competencies which your firm or industry may or may not expect on the part of TEC-trained personnel as a whole. Please examine the list carefully and check the needed level of expertise (5 = needed most; 1 = needed least).
>
> Mathematical skills
> Technical skills
> General knowledge
> Organizational ability
> Communication skills (writing & speaking)
> Problem-solving skills
> Manual dexterity
> Meeting the public
> Understanding of human relations
> Operation of complex equipment
> Knowledge of chemistry
> Knowledge of physics
> Knowledge of biology
> Knowledge of psychology
> Knowledge of electronics



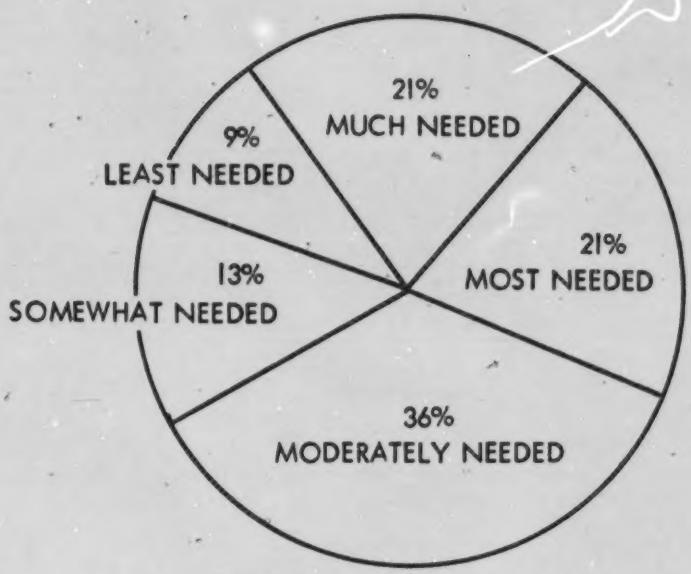
MATHEMATICAL SKILLS



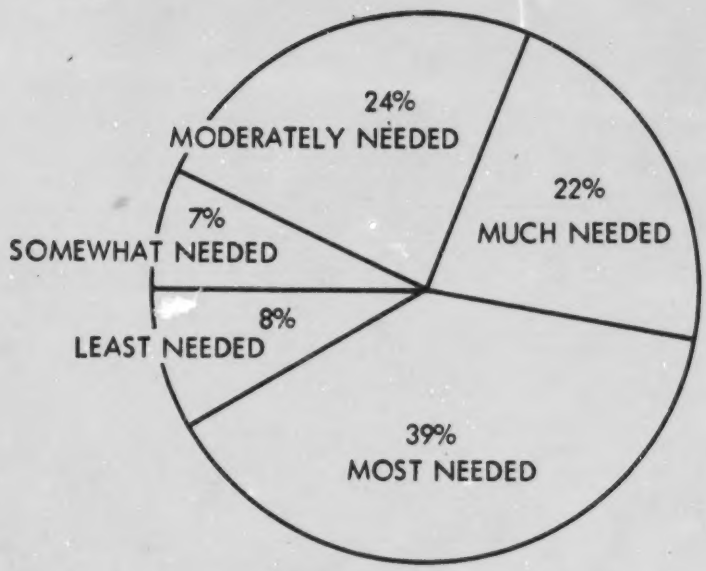
TECHNICAL SKILLS



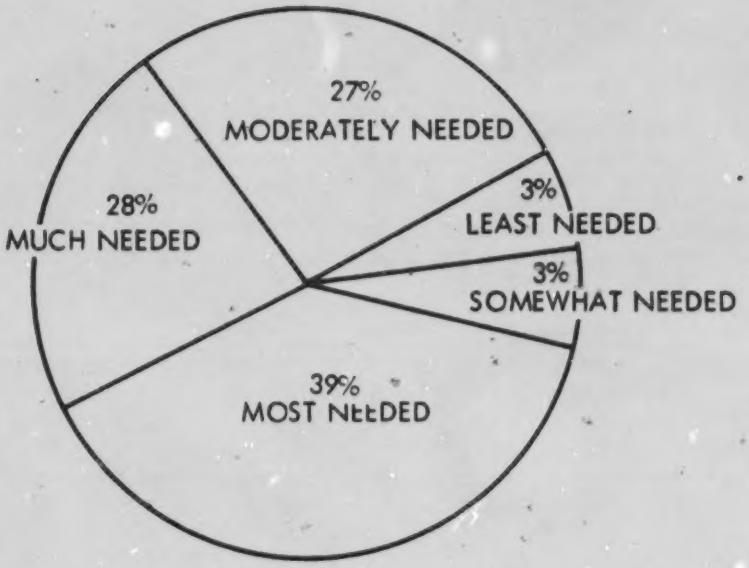
GENERAL KNOWLEDGE



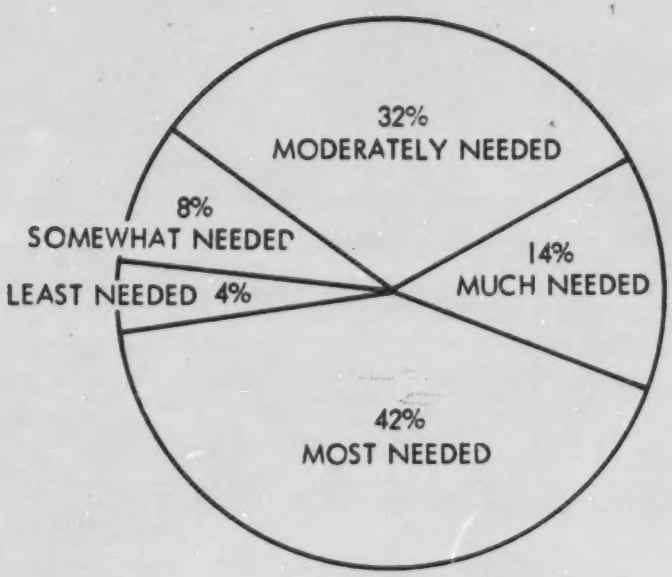
ORGANIZATIONAL ABILITY



COMMUNICATION SKILLS
(Writing and Speaking)



PROBLEM - SOLVING SKILLS



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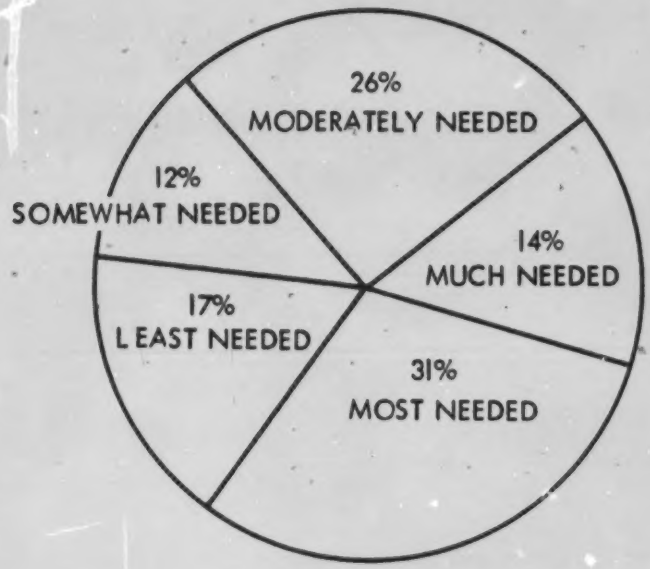
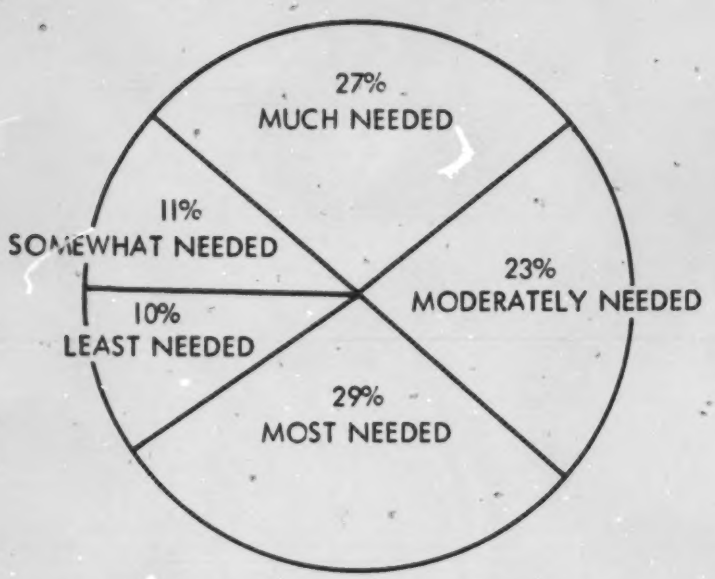
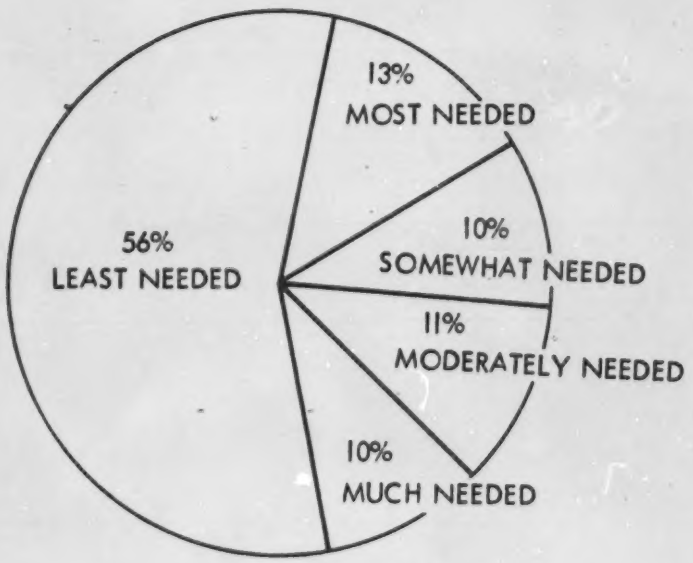


MEETING THE PUBLIC

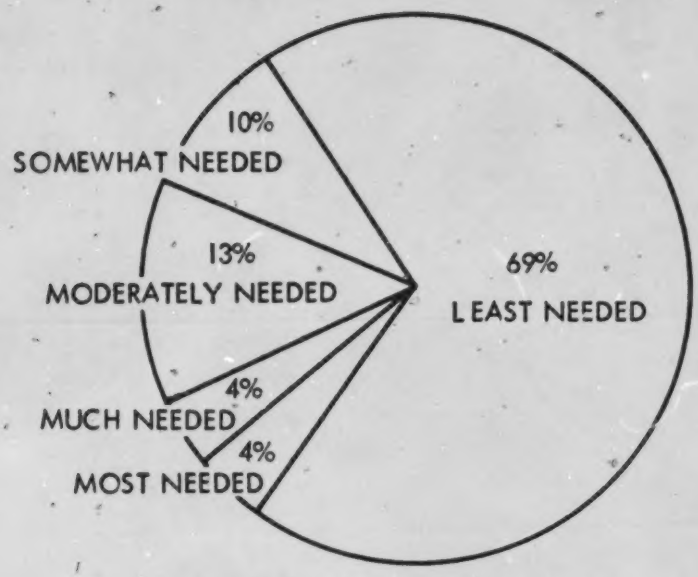
UNDERSTANDING OF HUMAN RELATIONS



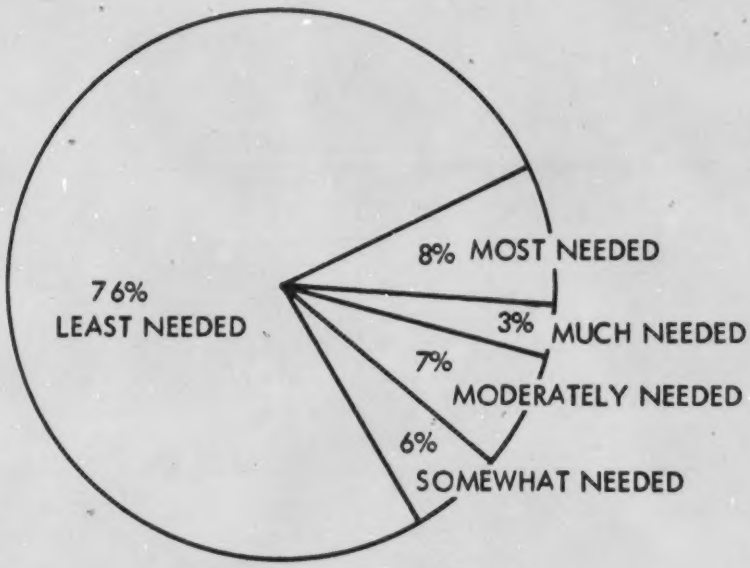
OPERATION CF COMPLEX EQUIPMENT



KNOWLEDGE OF CHEMISTRY

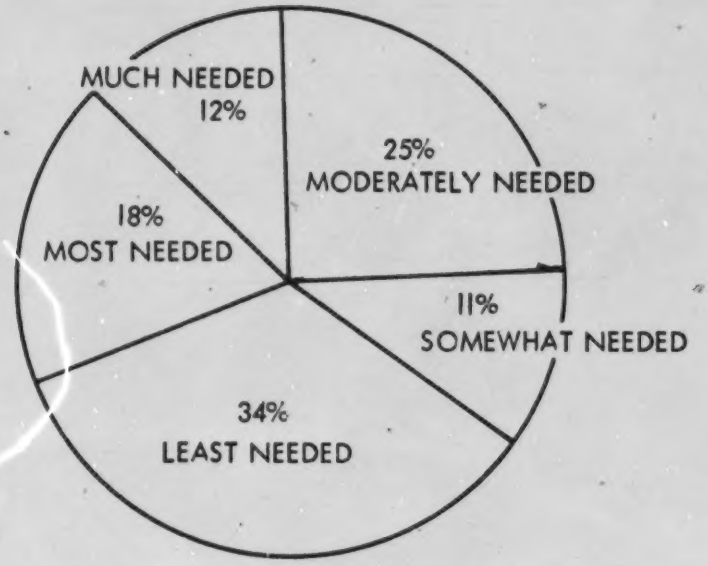


KNOWLEDGE OF PHYSICS



KNOWLEDGE OF BIOLOGY

KNOWLEDGE OF PSYCHOLOGY



KNOWLEDGE OF ELECTRONICS

INVENTORY OF OCCUPATIONS IN DEMAND IN THE SERVICE AREA

121-A

OCCUPATIONAL CATEGORY ↓	SHORTAGE OF LOCAL SUPPLY OF TRAINED MANPOWER (NUMBER OF INDUSTRIES REPORTING SHORTAGES)	NUMBER OF PERSONS CURRENTLY EMPLOYED IN OCCUPATIONAL CATEGORY WHO DO NOT HAVE MINIMUM CERTIFICATION OR EDUCATION NEEDED FOR THE JOB	ADDITIONAL FULL-TIME PERSONNEL NEEDED TO PROVIDE OPTIMUM CARE FOR PRESENT SERVICE LEVEL	APPROXIMATE NUMBER OF PERSONNEL NEEDED BY JULY 1985 FOR ANTICIPATED SERVICE LEVEL	WITHIN THE NEXT 5-YEAR PERIOD, THE SCOPE OF WORK IS EXPECTED TO INCREASE (# INDUSTRIES)
All-Round Machinists	29	126	36	417	26
Machine Tool Operator	6	425		68	6
Set-up Workers (Machine Tool)	4	3	48	41	8
Tool and Die Makers	11	31	214	106	13
Printing Pressman	3	2	1	27	6
Electroplaters	4	22	12	25	5
Industrial Foremen and Supervisory Personnel	10	200	14	121	25
Millwrights	5	12	5	45	11
Welders and Flamecutters	6	51	5	60	13
Bookkeeping Workers	12	25	3	78	34
Office Machine Operators	1	1	1	34	10
Shipping and Receiving Clerks	8	47	4	118	23
Stenographers and Secretaries	20	106	9	217	03
Computer Programmers	8	8	3	29	16
Police Officers	8		12	55	6
Truck and Bus Mechanics	6	6	10	23	4
Medical Lab Workers	1	24		28	6
LPN	5		1	28	11
Wastewater Treatment Plant Operators	5		1	18	6
Automobile Mechanics	12	24	22	81	15
Diesel Mechanics	3	11	4	12	5
Industrial Machine Repairers	5		1	43	11
Maintenance Electricians	13	53	57	217	24
Electricians (Construction)	6	9		45	6
Plumbers and Pipefitters	1	24		32	8
Drafting	5		2	40	14
Engineering Science Technicians	1	36	15	71	11
Automobile Body Repairers	8	14	22	54	10
Real Estate Sales-Workers and Brokers	2	4	1	49	7
Industrial Machinery Repairers	5		1	11	43

Chapter 7

ADDITIONAL FINDINGS

During the course of the interviews with representatives of business and industry, respondents were asked to comment on any topic related to Tri-County Technical College and its educational programs. These comments were recorded by the interviewers and are provided in this chapter. Many of the comments were grouped into subject categories, and those comments that could not be classified into established categories were placed in a section entitled "General." Furthermore, results of a series of questions about women in business and industry are also presented in this chapter.

To supplement the information collected from business and industry, statistical data and other recorded information were sought from additional sources. For example, interviews were held with the three Job Service offices in the Tri-County area to determine the critical occupations experienced by these employment agencies. In addition, information about national, regional, and local occupational trends was secured from such sources as the following:

- Occupation Outlook Handbook, 1978-79. (Washington, D. C., U. S. Department of Labor, Bureau of Labor Statistics, 1978)
- U. S. Industrial Outlook, 1978 With 5-Year Projections for 200 Industries. Washington, D. C., U. S. Government Printing Office, 1978.
- Monthly Labor Review (Periodical)
- South Carolina Manpower in Industry (South Carolina Employment Security Commission)
- Upstate Update (S. C. State Employment Service).
- Occupational Outlook for College Graduates (Washington, D. C., U. S. Department of Labor, Bureau of Labor Statistics)
- Occupational Training Needs, South Carolina and 10 Planning Districts (South Carolina Employment Security Commission)
- Statistical Abstract of the United States. (Washington, D. C., U. S. Bureau of the Census)
- South Carolina Statistical Abstract (South Carolina Division of Research and Statistical Services)
- Rankings of the Counties and School Districts of South Carolina (South Carolina Department of Education, Office of Research, Division of Administrative Planning)

As a result of information from the above sources, a number of trends and developments in business and industry, in the economy, and in the employment situation (national, regional, and local) are presented in this chapter.

INFORMATION FROM INTERVIEWS WITH JOB SERVICE AGENCIES

In the course of the Employer Needs Assessment, interviews were conducted with Job Service agencies in Anderson, Oconee, and Pickens counties. Summaries of each interview session are provided in the following sections.

ANDERSON COUNTY

Critical job areas in Anderson County are the skilled occupations--machinists, welders, finished carpenters, maintenance mechanics, textile workers, etc.--and general laborers. The Job Service represenative in Anderson County feels that Tri-County TEC's training programs generally meet the requirements and needs of local industries; however, the need for TEC to keep up with technological changes was recognized.

The most needed types of employees in Anderson County were as follows:

(1) Service jobs--cooks, waiters, waitresses
(2) Management trainees for retail outlets
(3) Sewing machine operators in the apparel industry
(4) Textile workers (weavers, loom fixers, spinners, and doffers)
(5) Secretarial-related jobs (office clerks, receptionists, etc.)
(6) Construction--carpentry and general construction
(7) Auto mechanics

The Job Service representative in Anderson claimed that sex descrimination in employment sometimes caused problems, although not major ones. Sometimes a firm specifies that a female is wanted for a job, but, according to the respondent, "Job Service can't provide just females."

In reference to TEC, the Job Service claimed that some representatives of firms feel that TEC instruction might be too oriented to "book work," with inadequate attention to realistic, on-the-job training (e.g., welding); however, Job Service feels that most TEC training programs are congruent with the area's job market.

Key punching courses for the data processing field were recommended as possible training to be offered at Tri-County TEC.

The Job Service representative in Anderson would also like to see TEC and his agency work together on job placement. He stated that Job service has a much wider scope in the placement area and that Job Service has job matching.

OCONEE COUNTY

Critical job areas reported by Job Service in Oconee County are sewing machine operators for local apparel industries and for management trainees--business administration occupations. Some of the latter prospective employees need to relocate. According to Job Service, the need for refrigeration technicians, electricians, and construction workers always rises each year in June, July, and August.

Currently, the most needed employees in Oconee County are sewing machine operators; management trainees; workers in service industries (restaurants, janitorial, clerks, etc.); carpenters, bricklayers, equipment operators (seasonal type jobs); security personnel, and secretarial and office clerks.

The Job Service representative in Oconee County claimed that no sex descrimination exists in the county and that few employers make specific requests for one or other of the sexes. According to the respondent, if a person has the needed skill, he/she can get the job.

In reference to Tri-County TEC, the Job Service respondent felt that TEC is "pretty much on top of things," even though he had heard "bad" things about some TEC graduates. The representative who was interviewed indicated that few TEC graduates came to Job Service and that "this indicates that they have no trouble in finding jobs."

Suggestions for TEC from Oconee's Job Service: respond to occupational needs of the garment and sewing industries, e.g., need for sewing machine operators.

PICKENS COUNTY

Critical job areas reported by Job Service in Pickens County are as follows: Class A machinists, highly-trained secretarial workers, highly-trained machinists, para-professional medical personnel and nurses.

The respondent at Job Service stated that skill courses at TEC offer good training for prospective employees and that TEC-trained clerical workers "are pretty good." Also--clerical jobs are in demand if prospective employees are willing to relocate. Respondent also pointed out that TEC's General Education courses are useful to employees, especially if these personnel plan to continue their education at a four-year institution.

Job Service reported that the most critical occupational categories in Pickens County were the following: machinists, sewing machine operators, welding and pipefitting; construction (carpentry work), fast-food restaurant managers; management trainees in finance companies (begin as collectors), and skilled textile workers. The respondent also noted that industries lean toward training programs for "upgrading" active employees and also recognize the value of employees going back to TEC to complete refresher, brush-up training. Sex descrimination in employment was reported to be insignificant in Pickens County. Comment by respondent: "Women who want a job that has traditionally been held only by men may get a little discontented. We don't have many problems with sex descrimination in employment." The respondent also strongly suggested that TEC continually upgrade its courses and instruction to keep up with technological advancements and other changes; furthermore, a computer programming course was recommended for Tri-County TEC.

NATIONAL OCCUPATION TRENDS*

1) By 1985, approximately 104.3 million persons will be in the U. S. civilian labor force--an increase of 19 per cent over the 1976 level of 87.5 million. Since 1960, the civilian labor force has increased sharply, greatly because of the increase in the number of women entering the job market.

2) The participation rate for women has continued to rise in the labor force, and the rate for men has declined.

3) Industries providing services will continue to offer more jobs than those providing goods. Service-providing industries include education, health care, trade, repair and maintenance, government, transportation, banking, and insurance. Only about one-third of the nation's labor force is currently employed in the production of goods through farming, construction, mining and manufacturing. Since World War II, service-producing industries in the U. S. have expanded rapidly; however, goods-producing industries have remained relatively constant.

4) Through the mid-1980's employment growth will vary widely by industry in the nation. Employment in manufacturing industries will grow by about 20 per cent. Service industries will grow by about 40 per cent. Finances, insurance, and real estate will grow faster than services as a whole.

5) In 1976, professional and clerical workers almost equaled operatives. Employment in this group is expected to grow by about 18 per cent between 1976 and 1985. The shift toward white-collar occupations will continue through 1985.

6) Clerical workers represent one of the largest and fastest growing occupational groups. Between 1976 and 1985, employment in this group is expected to grow about 29 per cent.

7) Presently, the unemployment rate is lowest for persons with college educations. Income also increases as the number of years of schooling increases. Another development of the 1970's is an increase in the earnings of high school graduates relative to earnings of college graduates.

8) Openings for secretaries are expected to be more than three times the number of openings for any other clerical occupation through 1985.

9) Employment of programmers and systems analysts, negligible in 1960, is expected to grow to half a million workers by 1985. Most openings for programmers and systems analysts will result from growth.

10) Many employment opportunities are expected in banking occupations.

11) Openings for retail trade sales workers far outnumbered openings for other sales workers.

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[1]SOURCE: Occupation Outlook Handbook, 1978-79. Washington, D. C., U. S. Department of Labor, Bureau of Labor Statistics, 1978.

12) Employment growth and replacement needs will create large numbers of job openings in the construction occupations.

13) Mechanical and repairer occupations offer many career opportunities to persons who are mechanically inclined. Through growth and replacement, the following fields will provide good employment opportunities to 1985: (1) air conditioning, refrigeration, and heating mechanics; (2) automobile mechanics; and (3) industrial machinery repairers.

14) Growing demand for dentists' services and expanded use of auxiliary workers will create good job opportunities in dental occupations.

15) Despite a large number of openings in many health technical occupations, competition will exist due to the large supply of qualified job seekers.

16) About 50 per cent of the job openings in health occupations during the next ten years will be for nursing personnel.

17) Even though farm output has increased by 50 per cent since 1950, agricultural employment has been cut in half and is expected to continue to decline.

18) Although employment in the construction industry fluctuates with the state of the economy, the trend through 1985 shows growth.

19) Labor-saving machinery has cut employment in the logging and lumber mill industry in half since 1950.

20) Very rapid employment growth is expected in plants that produce electronic computer equipment.

21) Employment in the printing and publishing industry has grown steadily, responding only slightly to economic downturns.

22) Employment in textile manufacturing, which declined in the 1950's, is expected to continue at recent levels.

23) The steady employment growth in radio and television broadcasting is expected to continue through 1985, with many of the new jobs in educational and cable television.

24) Continued rapid employment growth resulting from population growth, rising personal incomes, and more leisure time is expected in the restaurant industry.

25) Employment in the banking industry will continue to grow very rapidly as banks improve and expand services.

INDUSTRIAL TRENDS

Apparel

Diversification continues in the apparel industry and larger firms are improving their performances. Total employment in the industry has stabilized. Consumers' preference continues to shift towards apparel items made from natural fibers. According to the U. S. Department of Commerce, the domestic apparel industry will continue to make positive economic contributions to the manufacturing sector of the economy if trade agreements can maintain current import patterns.[1]

Automotive Services

Despite the high cost of gasoline and increasing efforts by government and industry to encourage workers to save fuel through such methods as car-pooling, fringe parking, and more use of public transportation systems, the automotive services industry continues its long-term growth. Receipts of automotive service establishments totaled an estimated $21.1 billion in 1977, an 11 percent gain over levels a year earlier. In 1978, receipts were expected to rise 12 percent more to reach a total of $23.6 billion, largely reflecting rising maintenance and repair costs of today's more fuel-efficient autos that are manufactured with improved safety and emission devices. About 90 percent of all automotive service receipts can be accounted for by auto repair services and car/truck leasing and rentals. The recent introduction of smaller, fuel-economical cars with new emission parts has greatly complicated work in the area of auto repair. Today's auto mechanics must be acquainted with such new developments as cars with fuel injection systems, temperature and speed valving, fuel evaporation controls, metering valves, catalytic converters, and electronic controlled ignition systems.[2]

Bricklayers

Bricklayers are employed to build walls, partitions, fireplaces, and other structures using brick, cinder block, and other masonry materials. Firebrick linings are also installed by bricklayers. Stonemasons work on the stone exteriors of structures, using natural or artificial stone. Many bricklayers and stonemasons undergo an apprenticeship which typically requires three years of on-the-job training, as well as classroom instruction. Employment opportunities for bricklayers are good because of increasing use of brick, particularly for interior low-bearing walls. Employment opportunities for stonemasons are less favorable because stone is an expensive material and is most often used on high-cost buildings, such as offices, hotels, and churches.

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[1] U. S. Department of Commerce, U. S. Industrial Outlook, 1978 With 5-Year Projections for 200 Industries. Washington, D. C., U. S. Government Printing Office, 1978. p. 245.

[2] Ibid., p. 449.

Computer and Related Occupations

Since the computer was incorporated into commercial use, computer systems have become increasingly important to business and industry. Computer and related occupational workers design data processing systems, write instructions and translate data into machine-readable language and operate computers and peripheral equipment. Specialized training is required for most computer careers. College degrees are normally required on the part of systems analysts and programmers, whereas computer operators are usually expected to have a high school diploma. The Occupational Outlook Handbook lists three broad occupational categories: Computer Operating Personnel (D.O.T. 213.138, .382, .582, .588, and 223.387), Programmers (D.O.T. 020.188), and Systems Analysts (D.O.T. 003.187, 012.168, 020.081 and 020.088).

Construction

In recent years construction employment within the service area of Tri-County Technical College has been moderately large because of the growing population and the need to build new homes and commercial buildings.

Outlays for new construction are expected to rise 10 percent, private and public sector gains being about equal. Housing starts will hold up as multi-units go higher and single-units recede from the second level. Non-building construction markets will generally tend to expand faster than non-residential building markets.[1]

Electric Motors and Generators

More than 2,100 employees in the Tri-County area work for firms classified as manufacturers of motors and generators (e.g., SIC 3621). Of this number the greater poportion work at Singer Company Sewing Products Division in Anderson, which manufactures sewing machines, floor care equipment, plastic molded parts, and motors. Other firms in this category are Darby Electric and Temco, Inc., both in Anderson, and Mears Electrical Company in Pelzer.

Energy

"The energy sector in the United States employs some 4 million workers. Bureau of Labor Statistics projections suggest that the energy sector (excluding power plant construction and coal mining) will increase by about 16 percent between 1976 and 1985. This translates into about 50,000 net new jobs per year. Many of these jobs are in the highly skilled craft areas, requiring apprenticeship or other specialized training."[2]

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[1] U. S. Department of Commerce, U. S. Industrial Outlook, 1978 With 5-Year Projections for 200 Industries. Washington, D. C., U. S. Government Printing Office, 1978. p. 1, 6.

[2] Willis J. Nordlund and John Mumford, "Estimating Employment Potential in U. S. Energy Industries," Monthly Labor Review 101(May, 1978):10.

Energy (Cont.)

"Increased reliance on domestic energy sources, a policy with few opponents, will help boost employment in U. S. energy industries by more than 200,000 persons each year between now and 1981."[1]

Health and Medical Services

Within the next few years rapidly rising medical costs are expected to be curbed by cost containment efforts and the utilization of review procedures instituted by legislators, health care provides, the health insurance industry, and the business community.[2]

Lumber and Softwood

In recent years and over the nation as a whole, the lumber and softwood plywood industries have enjoyed substantial demands for wood products of virtually every type, species, and grade. For some wood items, domestic supply has not been able to match the demand, even through lumber and plywood production have been at near-capacity levels. Energy costs are causing industries to increasingly turn to the burning of wood residues rather than the using of other fuels. Moderate growth in lumber and plywood production is expected within the immediate future. This growth is anticipated as a response to continuing requirements for residential and other types of construction, as well as for miscellaneous wood products, including furniture, wood containers, pallets, and transportation equipment.[3]

Approximately 278 employees work in the lumber and wood products industry of the three-county area; they are with sawmills and lumber companies and wooden furniture, plywood, and particleboard manufacturing plants (SIC 2411, 2421, 2426, 2431, 2435, 2448, and 2492). Lumber and wood products industries in the Tri-County area are the following:

1) Dalton Bros. Lumber Co., Easley
2) Pellco, Inc., Seneca
3) Southern Wood Piedmont, West Union
4) Compton & Cloer Lumber Co., Pickens
5) Davis Bros. Lumber Co., Richland
6) Linley Lumber Co., West Union
7) Newton Lumber Co., Liberty
8) Marshane Corporation, Anderson
9) Anchor Homes, Starr
10) Colony Enterprise, Anderson
11) Wood Products Co., Walhalla

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[1]Willis J. Nordlund and John Mumford, "Estimating Employment Potential in U. S. Energy Industries," Monthly Labor Review 101(May, 1978):10.

[2]U. S. Department of Commerce, U. S. Industrial Outlook, 1978 With 5-Year Projections for 200 Industries. Washington, D. C., U. S. Government Printing Office, 1978. p. 437.

[3]U. S. Industrial Outlook, 1978. p. 31.

Manufactured Housing

Rising activity in the area of manufactured housing reflects an overall increase in demands for new housing. Mobile home shipments increased 10 percent in 1977; 11 percent increase was predicted for 1978. Prefab wood building recovered, gaining 26 percent; an additional 7 percent increase was forecasted for 1978.[1]

Metal Working

Metal working has expanded in the service area during the past decade. At Tri-County Technical College the machine shop and tool and die making programs have witnessed increasing enrollments in recent years. Presently, an abundance of metal working jobs exists in the service area. Metal working occupations will expand in the tri-county area.

Millwrights

Millwrights are skilled workers who move and install heavy industrial machinery. They must be able to dismantle, reassemble, and align complex equipment. In the course of such work, millwrights fit bearings, align gears and wheels, attach motors, and connect belts. They often construct concrete foundations and platforms and fabricate metal framework on which machinery can be mounted. Among the skills required of millwrights is the ability to read blueprints and work with wood, steel, concrete, and other building materials. Industrial machinery repairers also performed millwrights' duties.

Plastics Materials & Resins

Shipments in 1978 were expected to be about 10.3 billion, 14 pecent above 1977, reflecting both increased consumption and higher prices. Production in the areas of plastics materials and resins should increase about 8 percent to set a new record, according to forecasts, and no raw material shortages are expected.[2]

The fastest growing sector of the chemical and allied products industry is plastic materials and resins, which is expected to increase at a rate of 14 percent. Industries within SIC Code 2821 experienced an increase of 15 percent between 1975-76 and another increase of 9 percent between 1976-77 (based upon value of plastics products shipments). For the period 1977-78, the Bureau of Domestic Commerce estimates that plastic materials and resins will increase their output by 14 percent. The gain will reflect both increased consumption and higher prices; production in these industries is expected to increase to a new record.

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[1] U. S. Department of Commerce, U. S. Industrial Outlook, 1978 With 5-Year Projections for 200 Industries. Washington, D. C., U. S. Government Printing Office, 1978. p. 7.

[2] U. S. Department of Commerce, U. S. Industrial Outlook, 1978 With 5-Year Projections for 200 Industries. Washington, D. C., U. S. Government Printing Office, 1978. p. 115.

Plastics Materials and Resins (Cont.)

Industries which manufacture plastic materials and resins (SIC 2821 produce plastic materials by chemical processing for sale to the plastics products (SIC 3079) and other industires for molding, extruding, casting, fabricating, and finishing into components or parts for such products as furniture, automobiles, and appliances and as shaped goods for final consumption.[1]

Protective & Related Services

The need for police and protective services has increased in recent years due to the growth of the population and the economy. The numerous occupations within protective and related employment areas normally require formal training programs, as well as on-the-job training. Classed within this occupational category are (D.O.T. 375.168), (D.O.T. 373.118-.884), FBI Special Agents (D.O.T. 375.168), Guards (D.O.T. 372.868), Firefighters (D.O.T. 373.118-.884), Police Officers (D.O.T. 375.118-.868 and 377.868), State Police Officers (D.O.T. 375.118, .138, .168, .228, .268, and .388).

Retail Trade

The widespread awareness among consumers of the need to conserve is apparently affecting sales of some expendable merchandise. High energy costs that absorb an ever-growing share of disposable income have had an overall sobering effect on many American consumers. The recent small gains in annual sales for apparel stores and a return to more conservative purchase patterns insofar as clothing is concerned may presage similar restrains in other sales areas.[2]

Science & Engineering Technicians

The work of scientists and engineers is supported by technicians, whose jobs are more practical and limited in scope. Among other things, technicians set up complex equipment and scientific instruments. In industrial production, they also help to test and inspect products, acting as liaisons between engineering and production departments. Some of these technicians provide technical services to customers. Technicians are employed in research, broadcasting, industrial work, drafting, surveying, and other occupations. Technicians acquire needed training for their jobs in many ways, including on-the-job training programs and formal

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[1] U. S. Industrial Outlook 1978. Washington, U. S. Government Printing Office. U. S. Department of Commerce, 1978. p. 85.

[2] U. S. Department of Commerce, U. S. Industrial Outlook, 1978 With 5-Year Projections for 200 Industries. Washington, D. C., U. S. Government Printing Office, 1978. p. 185.

Science & Engineering Technicians (Cont.)

course work at educational institutions. Employers quite often seek technicians who were graduated from specialized courses or programs particularly one and two-year programs offered at such post-secondary education institutions as technical institutes, junior and community colleges, vocational and technical schools, or colleges and universities. The employment outlook for trained technicians in science and technology appears to be bright, especially for the control of air, water, and voice pollution and for the development of new sources of energy and of combating disease.

Textiles

The demand for textiles has increased in recent years, despite problems of imports and the increasing costs of energy, labor, materials, and state and federal safety and environmental regulations. Demands for apparel products, autos, housing, and furniture--primary users of textile products--grew at a moderate rate in 1977, along with consumer spending. The textile industry of the United States is a component of the fiber/textile/apparel industrial complex --the nation's largest industrial employer. One out of eight U. S. workers in manufacturing is employed in textiles. It is also the largest employer of women and minority workers in manufacturing. Textile plants are located in 48 states; the highest concentration of them is in the Carolinas and Georgia. The industry is one of the primary employers in several communities of Tri-County Technical College's service area, making significant contributions to their economic well being.[1]

Employment over the nation in the textile industry during 1977 averaged 980,000, up from 897,000 in 1976. About 87 percent of the employed labor force are production workers compared with 72 percent in all manufacturing.[2]

Robert E. Leak, director of the State Development Board, noted in February, 1979, that South Carolina's textile industry is beginning to decline as a job market because it is becoming less labor-intensive, while continuing to provide large quantities of the world's textiles. According to Leak, South Carolina lost 25,000 jobs in the textile industry between 1978 and 1979. He also pointed out that the state will witness expansions in the chemical and electronics industries.[3]

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[1] U. S. Department of Commerce, U. S. Industrial Outlook, 1978 With 5-Year Projections for 200 Industries. Washington, D. C., U. S. Government Printing Office, 1978. p. 239.

[2] Ibid., p. 240

[3] "Official Predicts Textile Job Market Decline, "Greenville News, February 24, 1979. p. 11-A.

Textile Machinery

Textile machinery manufacturing establishments in the U. S. total in excess of 570; from year to year, little variance has been evident in this number. The manufacture of spare parts and accessories comprises a large portion of the textile machinery industry; this activity normally accounts for approximately 40 percent of textile machinery shipments. Approximately sixty-two percent of U. S. textile machinery manufacturers are engaged in the production and supplying of parts and accessories for all types of textile machinery. Almost 31 percent of the nation's production of textile machinery is designed for export trade.[1]

World demand for textile machinery in 1977 declined because of the uncertainty of markets for textile goods and because the rapid expansion of textile manufacturing during recent years had saturated the market.[2]

In the Tri-County area nine industries which manufacture textile machinery (SIC 3552) are operating. These industries employ a total of approximately 1,981 employees in Anderson, Oconee, and Pickens counties. The greatest proportion of these employees (i.e., 1,716) work in Pickens County at the Platt Saco Lowell Corporation and the Platt Saco Lowell Replacement Parts Center in Easley. Tri-County area manufacturers of textile machinery are listed below:

1) A & T Textile Parts, Inc., Anderson
2) Custom Stamping, Inc., Anderson
3) Foundry & Steel, Inc., Anderson
4) Machine Parts, Inc., Anderson
5) Palmetto Machine Shop, Anderson
6) Platt Saco Lowell Corp., Easley
7) Platt Saco Lowell, Replacement Parts Center, Easley
8) Seabrook, Inc., Anderson
9) Southern Textile Works, Anderson

Welders

Welders join two pieces of material, usually metal, by melting them together; they work in the areas of construction for automobiles, spececraft, ships, household appliances, and thousands of other products. Welding techniques are also used to join beams and steel reinforcing rods in buildings, bridges, and roads. Welding processes differ and are used for a wide variety of purposes. Approximately 645,000 welders and frame

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[1] U. S. Industrial Outlook, 1978. p. 376-378.

[2] U. S. Department of Commerce, U. S. Industrial Outlook, 1978 With 5-Year Projections for 200 Industries. Washington, D. C., U. S. Government Printing Office, 1978. p. 376.

Welders

cutters were employed in the entire nation in 1974. Training required to become a skilled welder generally entail a period of from one to two years. However, jobs requiring very basic welding skills can be learned in a few months. Job opportunities for welders in the nation as a whole are currently good, according to the Occupational Outlook Handbook. Employment in the welding field is expected to increase faster than the average for all occupations through the mid-1980's as a result of the rather favorable long-run outlook for metalworking industries and increasing uses of welding.

Wholesale Trade

Sales of merchant wholesalers is expected to rise 10 percent as market share grows. Industry is worried about inflation and product liability. The use of computerization continues to grow as wholesalers strive for greater productivity.[1]

Printing and Publishing

The graphics arts industry is one of the largest manufacturing industries in the nation. Its total receipts were expected to reach $52 billion in 1978. In the nation as a whole, approximately 40,000 establishments comprise the printing and publishing industry; however, 80 percent of all these have fewer than 20 employees.

Technological innovations within the graphics arts industry in recent years have occurred rapidly with a profound impact on printing and publishing. Typesetting by hot metal and printing by the rotary letterpress process gave way to cold type, computer-generated composition and printing by the web offset process.

In the nation as a whole, the total value of receipts in the newspaper industry exceeded $13 billion. Commercial printers throughout the nation were expected to experience almost a 10 percent jump in 1978 receipts for a total of about $16 billion--almost 10 percent over 1977 receipts.

The following tri-county industries are involved in newspaper printing and publishing, facsimile copying, lithography, or commercial job printing (SIC 2711, 2721, 2741, 2751, 2752, and 2761):

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[1]U. S. Department of Commerce, U. S. Industrial Outlook, 1978 With 5-Year Projections for 200 Industries. Washington, D. C., U. S. Government Printing Office, 1978. p. 239.

Printing and Publishing (Cont.)

1) Belton News, Inc., Belton
2) Easley Progress, Easley
3) Honea Path Chronicle, Honea Path
4) Hub Publishing Co., Liberty
5) Independent Publishing Co., Anderson
6) Journal Co., Inc., Seneca
7) Keowee Courier, Walhalla
8) Palmetto Publishing Co., Anderson
9) Pickens Sentinel, Pickens
10) Spectator Press, Inc., Anderson
11) Westminster News, Westminster
12) Clemson Printer, Inc., Clemson
13) Cutters, Inc., Anderson
14) Electric City Printing Co., Anderson
15) Munn Printing Co., Anderson
16) Martin Printing Co., Easley
17) Palmetto Publishing Co., Anderson

Typically, printing craft workers specialize in one of four areas of printing operations: type composition, platemaking, presswork, or binding. Skills needed to perform these tasks can be mastered through an apprenticeship of from four to six years. One of the most rapidly growing methods of printing is lithographing, a process whereby matter to be printed is photographed, plate is then made from the photograph, and the inked plate is pressed against a rubber plate which in turn presses an image onto paper.

According to the Educational Council of the Graphic Arts Industry, Inc., graphic communications is a high-wage industry, and no other industry is so little affected by recession and layoffs. Further the Council claims that no other industry so greatly affects the economics, education, and democratic heritage of our country. General job categories in the graphic communications industries have been defined and include the following:

1. The "creative" people: The artists, illustrators, writers, reporters, and editors who work for newspapers, book publishing companies, commercial printers, advertising agencies. These are the people who create the message that is to be communicated graphically.

2. The "technologists": The engineers, scientists, ink and paper chemists--the people who design, engineer and build the equipment and who supply the "raw materials" of ideas, and inventions to keep the technology of graphic communications up to date. These people may work for the supplies to the industry--like the manufacturers of printing presses, the chemical companies, the paper companies, the ink manufacturers, the photo-chemical duplicating equipment companies. But the printing industry itself employs many thousands of engineers--mechanical, chemical, electrical--who design, operate, and maintain the industry's sophisticated production machinery.

Printing and Publishing (Cont.)

3. The "technicians": The quality control and process control technicians, researchers, estimators, and production men, data processing experts, and computer specialists.

4. The "craftsmen": Compositors, platemakers, process artists, process photographers, pressmen, bookbinders, proofreaders, strippers, diemakers, packaging set-up men, toolmakers, electricians, paper-machine tenders, color matchers, machinists.

5. The "merchandisers": The sales and marketing people who sell printing, and those who sell equipment and supplies used in the industry.

6. The "managers": The professionally-trained policy and decision-making men and women in the industry.[1]

ADDITIONAL TRENDS: THE TRI-COUNTY SERVICE AREA

1) Although the tri-county area remains rural, the population is steadily growing and is rapidly becoming more heterogeneous.

2) In very recent decades, Anderson, Oconee, and Pickens counties have moved from an agrarian to a manufacturing economy.

3) About half of the employees in Anderson, Oconee, and Pickens counties are working in manufacturing industries, with textiles and apparel continuing to dominate. A large proportion of households within the service area have someone employed in manufacturing of one type or another.

4) Presently, the tri-county service area does not have a critical general manpower shortage; however, there is a shortage of highly-skilled and technically-trained manpower in certain occupational categories for which employment opportunities were limited until recently. Furthermore, these shortages could become accute as existing firms expand and as new industries move into the service area.

5) For the foreseeable future, manufacturing will continue to be the primary source of income for residents of the tri-county area.

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[1] Careers in Graphic Communications. Philadelphia: Education Council of the Graphic Arts Industries, Inc., an Affiliate of the Graphics Arts Technical Foundation, n.d.

6) Based upon present and predicted demands for personnel in higher paying occupational categories, more residents of Anderson, Oconee, and Pickens counties can be expected to move into higher absolute dollar income brackets by 1985.

7) Within the service area, population growth and employment have exceeded national trends in recent years. From all available indications, both of these will also outpace the nation during the greater part of the coming decade.

8) Stimulated by the availability of additional income resulting from industrial growth and expansion in Anderson, Oconee, and Pickens counties, employment in the trades and services can also be expected to increase. White-collar jobs also appear to be growing, making a recognizable dent in the traditional reservoir of blue-collar manpower in the tri-county service area.

9) Local labor supply will be exceeded by demands for highly-skilled workers in non-textile manufacturing.

10) Assuming participation rates continue at the current average, student enrollment in two-year colleges is expected to increase between the present time and 1985. The trend will be felt particularly in two-year public institutions of higher education. The increasing representation of women in higher education enrollment is also expected to continue in the foreseeable future. College enrollment is also expected to be affected by an increasing awareness among many people that numerous job opportunities in our technological society require special training beyond that offered by high schools.

11) As a result of limited employment opportunities for liberal arts college graduates, student enrollment in career instruction in both 2- and 4-year colleges is likely to continue to rise in the immediate future.

12) Proportionately, employment in non-textile manufacturing has increased in recent years. Correspondingly, employment in the trades and services has also increased. The demand for non-textile labor is increasing. Furthermore, from all indications, textile industries within Anderson, Oconee, and Pickens counties will continue to rely primarily upon existing technology. Within non-textile industries, employment growth will continue to rise. Therefore, increasing demands will be made for new technical skills, many of which are not currently widely available in the local labor market.

DISTRIBUTION OF TECHNICIANS IN MANUFACTURING INDUSTRIES, U.S.: 1977

Industry	Technicians		Technicians per scientist and engineer
	Number	Percent	
Total Manufacturing	493,000	100.0	.77
Nondurable goods	109,400	22.2	.70
Food & kindred products	13,000	2.6	1.26
Tobacco & manufacturing	1,800	.4	1.20
Textile	6,200	1.3	1.00
Apparel	2,000	.4	.61
Paper & allied products	5,800	1.2	.60
Printing & publishing	5,400	1.1	1.29
Chemicals & allied products	50,200	10.2	.56
Petroleum refining	8,500	1.7	.50
Rubber & plastic products	11,600	2.4	1.02
Leather products	400	.1	.50
Miscellaneous manufacturing	4,500	.9	1.15
Durable goods	383,500	77.8	.79
Lumber & wood products	3,300	.7	1.18
Furniture & fixtures	3,200	.7	1.28
Stone, clay, & glass	9,400	1.9	1.02
Primary metals	20,000	4.1	.81
Fabricated metal products	33,200	6.7	1.01
Machinery	117,700	23.9	1.10
Electrical equipment	102,700	20.8	.74
Transportation equipment	56,800	11.5	.45
Professional & scientific instruments	37,200	7.6	.91

SOURCE: National Science Foundation

PAGES 138 through 150 were deleted due to irreproducibility

THEY CONTAINED:

COMMENTS MADE BY RESPONDENTS IN

BUSINESS AND INDUSTRY

ANDERSON, OCONEE, AND PICKENS COUNTIES

EMPLOYER NEEDS ASSESSMENT, 1978-79

SEX ROLES IN INDUSTRY

A supplementary questionnaire was used by interviewers at large industries (25 or more employees) to obtain information about sex roles in industry. The following questions were posed, producing the information/responses as indicated below.

1) What measures has your firm implemented in regard to the Equal Opportunity Employment Act?

Eighty percent of the large firms claimed to be in strict compliance with the act, and the following comments were made by fourteen respondents:

"This firm carefully follows guidelines of the act because of DCA contracts."

"Our goal here is to seek to improve our record in this area."

"We do not discriminate on the basis of sex."

"We run government yarn at this plant; therefore, we definitely follow all EOE guidelines. We actively recruit women and members of minority groups."

"We hire the best qualified person--male and female."

"We make affirmative action reports on a quarterly basis."

"Here at this plant, we're more concerned with a person's skill rather than with his/her gender."

"We've never been visited by the EOC representative, but EOC is vital to this company."

"Our corporate office directs complete compliance with the Equal Opportunity Act."

"Half of our employees are men, half are women."

"We seek qualified minorities and hire on the basis of qualifications."

"We establish goals in hiring, based on categories of personnel."

"This firm does not discriminate."

"We practice open-door hiring."

2) Seventy respondents reported that job opportunities for women employed by their firms were equal to those of men. Two respondents answered the question negatively.

3) Fifty-eight respondents claimed that women employed by their firms received pay equal to that of men when the same job is performed.

4) Thirty-eight firms reported that a person was employed to handle women's affairs; among that number, twenty-five devoted part-time to this activity. Twenty-five respondents reported that their firms did not employ a coordinator of women's affairs. Some comments:

"Our personnel director is responsible for all employee relations, whether they deal with men or women."

"We study total employment problems, without regard to sex of employees."

"We concentrate on employee affairs rather than upon sex."

"Everyone is treated equally."

"Our general manager handles affairs of female workers."

"We don't have very many women employed here."

"Our overall affirmative action program takes the place of a coordinator or women's affairs.

"Employee relations are not distinguished by sex."

"Men and women do not have the same jobs here."

"Our manager says that there are 'women's jobs' and 'men's jobs'. Jobs for men are too dirty for women. He wouldn't put a woman on a man's job."

"The only women we have here are in the office."

"We don't have women employees here. We've interviewed some women, but they are generally not interested."

Chapter 8

RECOMMENDATIONS

Although readers of this report will probably be able to glean a considerable amount of information from data presented in the preceding chapters, this report would not be complete without a list of recommendations from those who conducted the Employer Needs Assessment at Tri-County Technical College. Therefore, this final chapter is devoted to recommendations which seem appropriate, based upon the results of the survey among the business and industrial communities of Anderson, Oconee, and Pickens counties. These recommendations have been grouped into subject categories selected on the basis of respondents' comments and concerns.

General

1) Increase efforts to devise more thorough and more uniform methods to evaluate the quality of instruction and the performance of all instructors.
2) Continual monitoring of the community is also recommended. This is especially important at a time when Tri-County Technical College and area vocational education centers must respond to changes in the service area, particularly to developments in the business and industrial community. The institution should continue to evaluate, on a periodic basis, the extent to which its educational programs meet the needs of both the students and the industrial community of the service area.
3) Whenever possible, additional programs of cooperative education with local businesses and industries should be established. These programs will eliminate criticisms of some employers who feel that more on-the-job training would add depth to the occupational preparation of TEC graduates.
4) Increased emphasis should be place on the maximum use of advisory committees for instructional programs.
5) Instructors should take advantage of all opportunities to keep abreast of technological advances being reflected in local firms which employ graduates of Tri-County TEC and area vocational education centers. In this respect, faculty and staff members should be encouraged to take advantage of all opportunities--both formal and informal--to upgrade the level of their technological knowledge and skills, as well as to expand their appreciation and use of new instructional methods and materials.
6) Findings of the Employer Needs Assessment should be used extensively to improve individual instructional programs; defined weaknesses ought to be corrected as soon as economically feasible; and special efforts should be made to improve instruction in the areas of radio/TV and secretarial science. Special attention should also be focused on the need to recruit more TEC and vocational education students in the areas of auto mechanics, auto body repair, electronics engineering technology, machine tool technology, welding, secretarial science, and management.
7) As the industrial structure of the service area of Tri-County Technical College changes, the institution and local vocational education centers should eliminate training programs directed toward declining occupational areas. At the same time, programs in which shortages of trained manpower exist as a result of redistributions among business and industrial occupations should be strengthened.

8) Make additional efforts to recruit more women, minority, ethnic, and older students, placing emphasis on the need for vocational training. Also, focus additional attention on career-oriented training for persons who have already obtained a liberal arts education but who cannot currently find work because of limited employment opportunities for persons without needed job skills.
9) It is highly recommended that Tri-County Technical College carefully review the plan devised by the State Board for Technical and Comprehensive Education and entitled "Design for the 80's." This concept appears to offer some viable alternatives for training in high technologies--opportunities that cannot presently be offered at the local level because of fiscal and physical constraints.
10) Explore the possibility of conducting additional short-term, in-service upgrading programs, specialized refresher courses, workshops and institutes for personnel who are already employed in business and industry. From the results of the Employer Needs Assessment, it is apparent that many personnel officers in business and industry feel the need for various occupation-oriented upgrading courses conducted by TEC. A complete list of recommended subject areas for such training is included in Chapter 5.

Business and Human Services Division

Increase efforts to recruit more students for training programs in the general area of Business Technology: managers and supervisors, bookkeeping workers, stenographers and secretaries, clerical workers, and office machine operators.

Secretarial Science

Within the tri-county service area, TEC-trained secretaries and other office workers are perhaps the most visable graduates of the college. Make additional efforts to instill more professionalism in the attitudes and behavior of secretarial science students. Place emphasis during instruction on the basics of communication, work responsibility, and the human element in the work environment. Devote more attention to the improvement of students' attitudes toward work and their relationship toward clients and to the public. Also stress personal conduct, office etiquette, and job responsibilities.

Automotive Mechanics/Auto Body Repair/Welding

Intensify recruiting efforts for students who can enter training programs for auto mechanics, auto body repair, and welding and flamecutting.

Brick Masonry/Millwork and Cabinet Making

Anticipated increases in construction activities and related fields are expected to require additional and more highly qualified construction carpenters and brick masons. Increase efforts at Tri-County TEC to recruit more students for occupational training in these fields.

Heating/Air Conditioning

Place more emphasis upon instruction related to heat pumps and energy conservation. Initiate a training program for solar energy technicians and provide additional instruction about solar heating and solar hot water.

Industrial Electronics/Electronics Engineering Technology

Place more emphasis upon television/radio repair to fill the local need for trained repairmen. Incorporate into the electronics curriculum more instruction about solid state electronics technology in the context of its industrial application. Moreover, place additional emphasis upon the application of theoretical knowledge to practical work in electronics (e.g., students need more laboratory work, more "hands-on" experience that will better qualify them to take jobs in business and industry). Because of the local demand for maintenance electricians and construction electricians, encourage more students to prepare for jobs in these fields. To support curriculum courses related to the theory and application of microprocessors, it is recommended that Tri-County Technical College seriously explore the possibility of acquiring support equipment for laboratory training in this field. Because of the technological nature of instruction in the general field of electronics, it is imperative that continuous attention be given at the college to the adequacy of training equipment for both Industrial Electronics and Electronics Engineering Technology curricula.

Machine Tool Technology

To meet the chronic shortage of trained tool and die makers in up-state South Carolina--especially in the tri-county area--it is recommended that the Tool and Die Department initiate a program to more heavily involve representatives of local industries in training for this occupational category. For example, a jointly-sponsored apprenticeship program for which local industries might suggest and help select personnel for a formal and on-the-job training program might be very beneficial to both TEC and local industries. It is apparent that the shortage of qualified tool and die makers can be eased only with the involvement and commitment of both TEC and local industries. To meet demands for tool and die makers it is further recommended that an additional full-time faculty member with a strong background in design and plastics be employed to teach courses and to coordinate appropriate training for plastics workers. Whenever possible, arrange additional cooperative education projects through which students can obtain more on-the-job training and experience to supplement classroom instruction. Make additional efforts to recruit more students into the Machine Tool Technology program so that industry's demands for qualified personnel can be met. Apparently, some of the gaps in TEC's machine tool training could be narrowed with the purchase (or availability) of such new equipment as a jig boring machine, an electrical discharge machine (EDM) for injection molding (plastics), and a cylindrical grinder for rounded metal parts. Because of the increasing widespread utilization of plastics and related materials and because of the recent development and growth of plastics industries in the tri-county area, develop training programs for tool and die operators in plastics and injection molding.

Industrial Maintenance Mechanics

Because of increasing local demands for industrial maintenance mechanics, additional efforts should be made to recruit more students for training in this program area.

Nuclear Engineering Technology

Because of the overall unfavorable comments made by respondents about the Nuclear Engineering Technology program at Tri-County TEC, it is recommended that this program be eliminated from the curriculum.

Radio and Television Broadcasting

Take necessary steps to improve the curriculum, equipment, and instruction of the Radio and TV Department. Place more emphasis on public speaking, grammar, and newscasting. Screen potential students more carefully so that those who do not have aptitudes for radio and TV work are encouraged to enter other areas. Apparently, some criticisms of present training in TEC's Radio and TV Department could also be eliminated with the purchase or availability of better and more modern equipment and facilities--e.g., video tape editing equipment, more space for darkroom activities, and a better radio control room. Moreover, because of the popularity of the subject of radio/television at Tri-County Technical College, the employment of another full-time faculty member could be justified and should be given careful consideration. If an additional faculty member cannot be employed, the number of students who enter the program might be reduced so that better quality instruction could be possible. Based upon comments made by respondents (e.g., personnel at radio and television stations), it is apparent that more attention should be devoted at TEC to the improvement of the quality of instruction in the Radio and Television Department and to increasing the amount of time students devote to practical and/or laboratory work.

General Education

Place additional emphasis on the need for writing, speaking, and related communication skills. Initiate a clearly-defined evaluation program to insure continuous monitoring of the quality of instruction in these areas. Take additional steps to publicize the Associate in Arts and Associate in Science degree programs at TEC and to improve the image of the General Education Division within the college's service area.

General Education/Division of Comprehensive Studies

According to a number of respondents, a number of TEC-trained personnel need better backgrounds in communication skills. Because of the general concern about the need for more emphasis at TEC upon human communication skills (reading, writing, spelling, etc.) and upon interpersonal relationships, it is recommended that the General Education Division and the Division of Comprehensive Studies reexamine their programs to determine how these needs can be more effectively met.

Division of Comprehensive Studies

Considering the general educational deficiencies of many adults in Anderson, Oconee, and Pickens counties, Tri-County TEC has much to offer through its GED, degree, and continuing education programs. As many citizens of the tri-county area have not completed high school and lack vocational and occupational training, it is recommended that efforts be made to intensify the recruitment of adult education students for the GED program and other programs offered at Tri-County TEC.

Continuing Education

The need for well-planned and well-executed workshops, specialized short-courses, and in-service upgrading courses for many subject areas and topics is recognized by numerous local businesses and industries. Therefore, it is recommended that the Continuing Education Division closely examine the list of subjects provided in Chapter 5 and offer additional, appropriate training for local employees. Moreover, devise methods to improve instruction in real estate, based upon the comments of respondents.

Student Services

Some representatives of local industries expressed concern about services provided (or not provided) by TEC's "Placement Office." It is apparent that a number of people in business and industry feel the need for closer communication with TEC through its Career Center; therefore, a recommendation is made that Tri-County TEC take additional steps to open channels of communication and to cooperate with local businesses and industries in filling employment needs. In addition, TEC appears to be in need of a more viable and comprehensive counseling and guidance programs for students of the college. A number of respondents in the Employer Needs Assessment recognized the need for better assessments of students and for more effective advisory and counseling services so that students will be able to select appropriate training programs--hence, occupational areas (jobs) for which they might be most qualified. Many opportunities appear to exist for Tri-County TEC to offer additional special training to upgrade job skills and to enrich the cultural lives of citizens in Anderson, Oconee, and Pickens counties. Because barriers to these educational opportunities exist (i.e., inadequate transportation, lack of child care facilities, unawareness among citizens of educational opportunities, etc.) a more aggressive and effective recruitment and public relations effort appears to be very much needed.

Quality of Instruction

To improve faculty performance and productivity, systematic assessments of the college's training (outcomes and inpact) should be made. In these assessments, student evaluations of instructors and instruction are very important. Therefore, efforts should be made at Tri-County Technical College to devise more thorough and more uniform methods to evaluate the quality of <u>all</u> instruction and the performance of <u>all</u> instructors.

New Programs

The development of a more diversified economy and a more affluent and enlightened population within the service area have wide implications for Tri-County TEC; thus, the institution should explore methods whereby it can respond more effectively to the need for technicians and other personnel for developing service industries and white collar jobs. For example, a relatively new labor market has emerged in recent years for technicians in the computer sciences. It is recommended that the college explore the feasibility of establishing a training program for computer operators and data processors. Many local industries currently recognize the need for personnel trained in these areas. It is apparent that the utilization of computers in many local firms is growing in all three counties and is likely to grow well into the foreseeable future.

Cooperation Among TEC Institutions

One of the implications of the survey data is that more cooperation among the TEC institutions is needed in the allocation of state funds so that equipment and resources can be concentrated in geographic areas where full levels of technological training are needed. More direction from the state level might be required in the future so that the full range of competencies (required job skills) for a given technology can be more readily identified. In addition, with more direction from the state level, critical areas where highly sophisticated technological training is needed can be more readily identified.

Non-Traditional Alternatives to Learning

Because of the relatively low educational attainment level within the tri-county area, additional special emphasis should be placed on non-traditional alternatives for learning at Tri-County TEC. This emphasis is important so that the basic communication and reasoning skills of deficient students can be upgraded to a level demanded by our contemporary technological age.

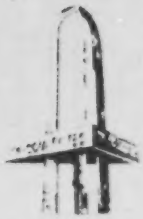
A P P E N D I C E S

A. Letter of Introduction and Cover Letter for Questionnaire

B. Questionnaire for Business and Industry

C. Occupational Inventory Checklist

D. Selected Occupations and Their Characteristics



Technical College

P.O. Box 587, Pendleton, South Carolina 29670

Dear

During the next one-year period, Tri-County Technical College will conduct an Employer Needs Assessment Project to assess both the quantitative and qualitative employment needs of business and industry in Anderson, Oconee, and Pickens counties. This project is being made possible by a grant from the Office of Vocational Education, S.C. State Department of Education.

As a result of our planned survey, we hope to be able to more accurately determine whether discrepancies exist between vocational and technical training needs of our service area and the educational programs at TEC that are designed to meet these needs. Therefore, the cooperation of selected representatives from business and industry will be of considerable value to us here at TEC as we attempt to upgrade and revise our educational programs. Your participation in the forthcoming survey can do much to help us accomplish this goal, and it can also be of considerable benefit to your firm.

Planning for the study has been underway for several weeks, and Dr. Charles H. Busha has been appointed project director. If you agree to participate with us in this study and will designate a representative who is very familiar with your employment and training needs and who can serve as a contact person, we will be getting in touch with him/her in the near future. A self-addressed, stamped post card is enclosed for your use in letting us know the name of your designated representative.

Thank you very much for your attention to this request. We look forward to your firm's participation in this worthwhile project.

Sincerely,

Don C Garrison

Don C. Garrison
President

DCG:bgl

Enclosure

PRESIDENT Dr. Don C. Garrison

COMMISSION Anderson County: Robert W. Smith, James R. Fowler, J. B. Dunn, Chairman
Oconee County: Dan P. Breazeale, Bruce A. Norton, James D. Rutledge
Pickens County: J. Ed Smith, Sam Gillespie, Mendel H. Stewart

Technical College

P.O. Box 587, Pendleton, South Carolina 29670

Dear

Tri-County Technical College is presently conducting a survey among the business and industrial communities of Anderson, Oconee, and Pickens counties. The survey is part of an Employer Needs Assessment, which is being made possible by a grant from the Office of Vocational Education, S.C. State Department of Education. The major purpose of the project is to collect information that will allow TEC to respond more positively to the quantitative and qualitative employment requirements of its three-county service area. Your cooperation and participation in this project is requested and will be of considerable benefit to us. It will allow Tri-County Technical College to update and upgrade its educational programs and services. We also feel that the project will ultimately prove to be of value as a stimulant for the economy of TEC's service area.

Enclosed is a questionnaire, which we hope that you will complete and return to us at your earliest convenience. A stamped and self-addressed envelope is provided for your use in mailing the instrument. Only a few minutes of your time will be required to complete the questionnaire, which does not require the recall of complex facts or figures. Strictly speaking, there are no "right" or "wrong" answers; your informed, personal reactions are the best responses to all questions.

Please read each item carefully and indicate which of the provided fixed responses most closely corresponds to your opinions, attitudes, or ideas about Tri-County Technical College. We strongly encourage you to answer as many of the questions as possible; however, should you feel that a question does not pertain to your firm or business, skip it and move on to the next item. Please be assured that the information provided to us will be kept strictly confidential. Specific responses will not be associated with particular individuals, firms, or businessess in written reports prepared upon completion of the project.

If you will complete and return the questionnaire within the next seven days, we would be most appreciative. Thank you for your consideration and participation in this research project.

Sincerely,

Charles H. Busha

Charles H. Busha, Ph.D.
Project Director
Employer Needs Assessment

CHB:bgl

Enclosure

PRESIDENT Dr. Don C. Gamson

COMMISSION Anderson County - Robert G. Smith, James R. Rucker, R. Curtis Coleman
Oconee County - Dean P. Strozier, Bruce A. Norton, James D. Rutledge
Pickens County - J. Ed Smith, Sam Gilliland, Vernon H. Steagall

QUESTIONNAIRE FOR BUSINESS AND INDUSTRY

Tri-County Technical College
Pendleton, SC 29670

Instructions: Please read all questions carefully. For each item in the questionnaire, please place an X in one of the circles corresponding to the provided reply which most closely reflects your personal response.

Example: What is South Carolina's westernmost county?

○ Anderson County ○ Oconee County
○ Greenville County ○ Pickens County

1. How familiar are you with the vocational and technical educational programs offered at Tri-County TEC?

○ very familiar ○ moderately familiar ○ relatively unfamiliar ○ totally unfamiliar

2. How frequently does your company or firm hire personnel who were trained at Tri-County TEC?

○ never ○ seldom ○ occasionally ○ often ○ very frequently ○ don't know

3. If, to the best of your knowledge, your firm or industry has not employed persons trained by Tri-County TEC, please indicate the most applicable reason. (Should there be more than one reasons, check other appropriate responses for this particular question only.)

○ This firm does not have a demand for them.
○ No graduates of Tri-County TEC have ever applied for jobs here.
○ Graduates of Tri-County TEC did not appear to have the necessary skills.
○ Tri-County TEC applicants did not do well in their job interviews.
○ Tri-County TEC applicants displayed poor attitudes toward work.
○ Other reason(s) (please specify): _____

_____

4. Considered as a group, the work habits of persons trained at Tri-County TEC who are now or who have been employed by your firm or industry could best be described as:

○ excellent ○ good ○ satisfactory ○ bad ○ very bad ○ don't know

5. If your firm has employed persons trained at Tri-County TEC, which of the following terms best describes the overall level at which you feel that they were prepared to perform required job skills?

○ very bad ○ bad ○ satisfactory ○ good ○ very good ○ don't know

6. How would you rate the overall occupational preparation of TEC-trained personnel in relation to that of other employees without such training?

○ TEC graduate is far better trained.
○ TEC graduate is somewhat better trained.
○ Both are about the same.
○ TEC graduate is a little less prepared.
○ TEC graduate is considerably less prepared.
○ Don't know.

7. Looking into the future to about 1985, what do you feel the overall job opportunities in your company will be for employees who have received various kinds of vocational or technical training at Tri-County TEC?

○ very good ○ good ○ stable ○ poor ○ very poor ○ uncertain

8. To what extent has the training received by persons at Tri-County TEC increased their opportunities for job placement and advancement in your firm or industry?

○ not at all ○ somewhat ○ to a great extent
○ very little ○ to a considerable extent ○ uncertain

9. If your firm has employed applicants who were trained at Tri-County TEC, what has been your primary source for their identification and eventual employment?

- ○ Employment agency
- ○ TEC faculty member
- ○ TEC industrial representative
- ○ TEC placement office
- ○ Mutual acquaintance
- ○ Published want-ad (i.e., in newspaper)
- ○ Initiative of the employee
- ○ Other (specify): _____

_____

10. In your opinion, what new occupations will emerge in the foreseeable future for which training and education at the certificate or associate degree level might be required in your business or industry?

Example: Laser Technician

a. _____

b. _____

11. In what educational program areas and at what level of TEC support do you see the need for additional assistance to meet the needs of the personnel employed by your firm or industry? (Please list educational programs and check corresponding level of desired TEC support.)

EDUCATIONAL PROGRAM AREAS	DESIRED TYPES OF TEC SUPPORT				
	In-service upgrading	Specialized courses	Certificate or degree program	Workshops	Institutes
Electronics (example)			✓	✓	
1.					
2.					
3.					

12. Please indicate your evaluations of past and present TEC-trained personnel employed by your firm or industry by placing check marks at appropriate points along the following scales:

QUALITIES	EVALUATIONS					
	Very poor	Poor	Satisfactory	Good	Very good	Don't know
Overall quality of work						
Following instructions						
Accepting responsibility						
Punctuality						
Work attendance						
Willingness to learn						
Cooperation with co-workers						
Cooperation with management						
Attitudes toward work						
Personal appearance						
Compliance with policies						
Other (specify):						

13. The following list contains technical and vocational skills and competencies which your firm or industry may or may not expect on the part of TEC-trained personnel as a whole. Please examine the list carefully and check the needed level of expertise (5 = needed most; 1 = needed least).

	Needed least		Moderately needed		Needed most
	1	2	3	4	5
Mathematical skills	___	___	___	___	___
Technical skills	___	___	___	___	___
General knowledge	___	___	___	___	___
Organizational ability	___	___	___	___	___
Communication skills (writing & speaking)	___	___	___	___	___
Problem-solving skills	___	___	___	___	___
Manual dexterity	___	___	___	___	___
Meeting the public	___	___	___	___	___
Understanding of human relations	___	___	___	___	___
Operation of complex equipment	___	___	___	___	___
Knowledge of chemistry	___	___	___	___	___
Knowledge of physics	___	___	___	___	___
Knowledge of biology	___	___	___	___	___
Knowledge of psychology	___	___	___	___	___
Knowledge of electronics	___	___	___	___	___
_____	___	___	___	___	___
_____	___	___	___	___	___
_____	___	___	___	___	___
_____	___	___	___	___	___
_____	___	___	___	___	___
_____	___	___	___	___	___

14. COMMENTS (In the space provided below, please make any comments which you feel will be of value to the Employer Needs Assessment.)

CONFIDENTIAL

OCCUPATIONAL INVENTORY CHECKLIST

EMPLOYER NEEDS ASSESSMENT PROJECT

Tri-County Technical College
Pendleton, S.C.

FIRM OR INDUSTRY: _____ SIC: _____ DATE: _____

ADDRESS: _____ TELEPHONE: _____ REPRESENTATIVE'S NAME: _____
(street) (city) (state) (zip)

OCCUPATIONAL CATEGORIES	LOCAL SUPPLY OF TRAINED MANPOWER (check one)			NUMBER OF PERSONS CURRENTLY EMPLOYED IN OCCUPATIONAL CATEGORY WHO DO NOT HAVE MINIMUM CERTIFICATION OR EDUCATION NEEDED FOR THE JOB	ADDITIONAL FULL-TIME PERSONNEL NEEDED TO PROVIDE OPTIMUM CARE FOR PRESENT SERVICE LEVEL	APPROXIMATE NUMBER OF PERSONNEL NEEDED BY JULY 1985 FOR ANTICIPATED SERVICE LEVEL	WITHIN THE NEXT FIVE-YEAR PERIOD, THE SCOPE OF WORK FOR THE JOB IS EXPECTED TO:			HAS A TEC-TRAINED PERSON EVER BEEN EMPLOYED TO FILL A JOB IN YOUR FIRM WITHIN THE CATEGORY		
	surplus	sufficient	shortage				Increase	Remain Constant	Decreas	YES	NO	DON'T KNOW
INDUSTRIAL PRODUCTION												
Foundry Occupations:												
Coremen												
Molders												
Patternmakers												
Machining Occupations:												
All-Round Machinists												
Instrument Makers (mechanical)												

OCCUPATIONAL CATEGORIES	LOCAL SUPPLY OF TRAINED MANPOWER (check one)			NUMBER OF PERSONS CURRENTLY EMPLOYED IN OCCUPATIONAL CATEGORY WHO DO NOT HAVE MINIMUM CERTIFICATION OR EDUCATION NEEDED FOR THE JOB	ADDITIONAL FULL-TIME PERSONNEL NEEDED TO PROVIDE OPTIMUM CARE FOR PRESENT SERVICE LEVEL	APPROXIMATE NUMBER OF PERSONNEL NEEDED BY July 1985 FOR ANTICIPATED SERVICE LEVEL	WITHIN THE NEXT FIVE-YEAR PERIOD, THE SCOPE OF WORK FOR THE JOB IS EXPECTED TO:			HAS A TEC-TRAINED PERSON EVER BEEN EMPLOYED TO FILL A JOB IN YOUR FIRM WITHIN THE CATEGORY?		
	surplus	sufficient	shortage				Increase	Remain Constant	Decrease	YES	NO	DON'T KNOW
Machine Tool Operators												
Set-up Workers (machine tools)												
Tool-and-die Makers												
Printing Occupations:	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Bookbinders and Related Workers												
Composing Room Occupations												
Electrotypers and Stereotypers												
Lithographic Occupations												
Photoengravers												
Printing Pressmen												
Other Industrial and Related Occupations:	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Automobile Painters												
Blacksmiths												

(3)

OCCUPATIONAL CATEGORIES	LOCAL SUPPLY OF TRAINED MANPOWER (check one)			NUMBER OF PERSONS CURRENTLY EMPLOYED IN OCCUPATIONAL CATEGORY WHO DO NOT HAVE MINIMUM CERTIFICATION OR EDUCATION NEEDED FOR THE JOB	ADDITIONAL FULL-TIME PERSONNEL NEEDED TO PROVIDE OPTIMUM CARE FOR PRESENT SERVICE LEVEL	APPROXIMATE NUMBER OF PERSONNEL NEEDED BY JULY 1985 FOR ANTICIPATED SERVICE LEVEL	WITHIN THE NEXT FIVE-YEAR PERIOD, THE SCOPE OF WORK FOR THE JOB IS EXPECTED TO:			HAS A TEC-TRAINED PERSON EVER BEEN EMPLOYED TO FILL A JOB IN YOUR FIRM WITHIN THE CATEGORY?		
	surplus	sufficient	shortage				Increase	Remain Constant	Decrease	YES	NO	DON'T KNOW
Boilermaking Occupations												
Electroplaters												
Foremen												
Furniture Upholsterers												
Millwrights												
Motion Picture Projectionists												
Photographic Laboratory Occupations												
Stationary Engineers												
Stationary Firemen												
Wastewater Treatment Plant Operators (Sewage)												
Welders and Flame-cutters												

OCCUPATIONAL CATEGORIES	LOCAL SUPPLY OF TRAINED MANPOWER (check one)			NUMBER OF PERSONS CURRENTLY EMPLOYED IN OCCUPATIONAL CATEGORY WHO DO NOT HAVE MINIMUM CERTIFICATION OR EDUCATION NEEDED FOR THE JOB	ADDITIONAL FULL-TIME PERSONNEL NEEDED TO PROVIDE OPTIMUM CARE FOR PRESENT SERVICE LEVEL	APPROXIMATE NUMBER OF PERSONNEL NEEDED BY JULY 1985 FOR ANTICIPATED SERVICE LEVEL	WITHIN THE NEXT FIVE-YEAR PERIOD, THE SCOPE OF WORK FOR THE JOB IS EXPECTED TO:			HAS A TEC-TRAINED PERSON EVER BEEN EMPLOYED TO FILL A JOB IN YOUR FIRM WITHIN THE CATEGORY?		
	surplus	sufficient	shortage				Increase	Remain Constant	Decrease	YES	NO	DON'T KNOW
OFFICE OCCUPATIONS												
Clerical Jobs:												
Bookkeeping Workers												
Cashiers												
File Clerks												
Hotel Front Office Clerks												
Office Machine Operators												
Postal Clerks												
Receptionists												
Shipping and Receiving Clerks												
Stenographers and Secretaries												
Stock Clerks												
Typists												

OCCUPATIONAL CATEGORIES	LOCAL SUPPLY OF TRAINED MANPOWER (check one)			NUMBER OF PERSONS CURRENTLY EMPLOYED IN OCCUPATIONAL CATEGORY WHO DO NOT HAVE MINIMUM CERTIFICATION OR EDUCATION NEEDED FOR THE JOB	ADDITIONAL FULL-TIME PERSONNEL NEEDED TO PROVIDE OPTIMUM CARE FOR PRESENT SERVICE LEVEL	APPROXIMATE NUMBER OF PERSONNEL NEEDED BY JULY 1985 FOR ANTICIPATED SERVICE LEVEL	WITHIN THE NEXT FIVE-YEAR PERIOD, THE SCOPE OF WORK FOR THE JOB IS EXPECTED TO:			HAS A TEC-TRAINED PERSON EVER BEEN EMPLOYED TO FILL A JOB IN YOUR FIRM WITHIN THE CATEGORY?		
	surplus	sufficient	shortage				Increase	Remain Constant	Decrease	YES	NO	DON'T KNOW
Computer and Related Occupations:												
Programmers												
Systems Analysts												
Banking Occupations:												
Bank Clerks												
Bank Tellers												
Insurance Occupations:												
Claims Adjusters												
Claim Examiners												
Administrative and Related Occupations:												
Advertising Workers												
Credit Officials												
Hotel Managers & Assistants												

(6)

OCCUPATIONAL CATEGORIES	LOCAL SUPPLY OF TRAINED MANPOWER (check one)			NUMBER OF PERSONS CURRENTLY EMPLOYED IN OCCUPATIONAL CATEGORY WHO DO NOT HAVE MINIMUM CERTIFICATION OR EDUCATION NEEDED FOR THE JOB	ADDITIONAL FULL-TIME PERSONNEL NEEDED TO PROVIDE OPTIMUM CARE FOR PRESENT SERVICE LEVEL	APPROXIMATE NUMBER OF PERSONNEL NEEDED BY JULY 1985 FOR ANTICIPATED SERVICE LEVEL	WITHIN THE NEXT FIVE-YEAR PERIOD, THE SCOPE OF WORK FOR THE JOB IS EXPECTED TO:			HAS A TEC-TRAINED PERSON EVER BEEN EMPLOYED TO FILL A JOB IN YOUR FIRM WITHIN THE CATEGORY?		
	surplus	sufficient	shortage				Increase	Remain Constant	Decrease	YES	NO	DON'T KNOW
SERVICE OCCUPATIONS	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Bartenders												
Cooks & Chefs												
Meatcutters												
Barbers												
Cosmetologists												
Funeral Directors												
Firefighters												
Police Officers												
State Police Officers												
SALES OCCUPATIONS	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Automobile Sales-workers												
Automobile Service Advisers												
Insurance Agents & Brokers												

(7)

OCCUPATIONAL CATEGORIES	LOCAL SUPPLY OF TRAINED MANPOWER (check one)			NUMBER OF PERSONS CURRENTLY EMPLOYED IN OCCUPATIONAL CATEGORY WHO DO NOT HAVE MINIMUM CERTIFICATION OR EDUCATION NEEDED FOR THE JOB	ADDITIONAL FULL-TIME PERSONNEL NEEDED TO PROVIDE OPTIMUM CARE FOR PRESENT SERVICE LEVEL	APPROXIMATE NUMBER OF PERSONNEL NEEDED BY JULY 1985 FOR ANTICIPATED SERVICE LEVEL	WITHIN THE NEXT FIVE-YEAR PERIOD, THE SCOPE OF WORK FOR THE JOB IS EXPECTED TO:			HAS A TEC-TRAINED PERSON EVER BEEN EMPLOYED TO FILL A JOB IN YOUR FIRM WITHIN THE CATEGORY?		
	surplus	sufficient	shortage				Increase	Remain Constant	Decrease	YES	NO	DON'T KNOW
Real Estate Sales-workers & Brokers												
Retail Trade Sales-workers												
Construction	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
Asbestos and Insulating Workers												
Bricklayers												
Carpenters												
Cement Masons(Cement & Concrete Finishers)												
Electricians (Construction)												
Floor Covering Installers												
Glaziers												
Lathers												
Operating Engineers (Construction Mach. Operators)												

(5)

OCCUPATIONAL CATEGORIES	LOCAL SUPPLY OF TRAINED MANPOWER (check one)			NUMBER OF PERSONS CURRENTLY EMPLOYED IN OCCUPATIONAL CATEGORY WHO DO NOT HAVE MINIMUM CERTIFICATION OR EDUCATION NEEDED FOR THE JOB	ADDITIONAL FULL-TIME PERSONNEL NEEDED TO PROVIDE OPTIMUM CARE FOR PRESENT SERVICE LEVEL	APPROXIMATE NUMBER OF PERSONNEL NEEDED BY JULY 1985 FOR ANTICIPATED SERVICE LEVEL	WITHIN THE NEXT FIVE-YEAR PERIOD, THE SCOPE OF WORK FOR THE JOB IS EXPECTED TO:			HAS A TEC-TRAINED PERSON EVER BEEN EMPLOYED TO FILL A JOB IN YOUR FIRM WITHIN THE CATEGORY?		
	surplus	sufficient	shortage				Increase	Remain Constant	Decrease	YES	NO	DON'T KNOW
Printing and Paperhangers												
Plasterers												
Plumbers and Pipefitters												
Roofers												
Sheet-metal Workers												
Stonemasons												
Structural, Ornamental, and Reinforcing iron workers, riggers, and machine movers												
Occupations in Transportation Activities	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Air traffic controllers												
Aircraft mechanics												
Flight Attendants												
Flight Engineers												

OCCUPATIONAL CATEGORIES	LOCAL SUPPLY OF TRAINED MANPOWER (check one)			NUMBER OF PERSONS CURRENTLY EMPLOYED IN OCCUPATIONAL CATEGORY WHO DO NOT HAVE MINIMUM CERTIFICATION OR EDUCATION NEEDED FOR THE JOB	ADDITIONAL FULL-TIME PERSONNEL NEEDED TO PROVIDE OPTIMUM CARE FOR PRESENT SERVICE LEVEL	APPROXIMATE NUMBER OF PERSONNEL NEEDED BY JULY 1985 FOR ANTICIPATED SERVICE LEVEL	WITHIN THE NEXT FIVE-YEAR PERIOD, THE SCOPE OF WORK FOR THE JOB IS EXPECTED TO:			HAS A TEC-TRAINED PERSON EVER BEEN EMPLOYED TO FILL A JOB IN YOUR FIRM WITHIN THE CATEGORY?		
	SURPLUS	SUFFICIENT	SHORTAGE				INCREASE	REMAIN CONSTANT	DECREASE	YES	NO	DON'T KNOW
Ground Radio Operators and Teletypists												
Pilots and Copilots												
Traffic Agents and Clerks												
Locomotive Engineers												
Locomotive Firemen (Helpers)												
Scientific and Technical Occupations	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Broadcasting Technicians												
Drafters												
Engineering and Science Technicians												
Food Processing Technicians												
Surveyors												
Mechanics and Repairers	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

(10)

OCCUPATIONAL CATEGORIES	LOCAL SUPPLY OF TRAINED MANPOWER (check one)			NUMBER OF PERSONS CURRENTLY EMPLOYED IN OCCUPATIONAL CATEGORY WHO DO NOT HAVE MINIMUM CERTIFICATION OR EDUCATION NEEDED FOR THE JOB	ADDITIONAL FULL-TIME PERSONNEL NEEDED TO PROVIDE OPTIMUM CARE FOR PRESENT SERVICE LEVEL	APPROXIMATE NUMBER OF PERSONNEL NEEDED BY JULY 1985 FOR ANTICIPATED SERVICE LEVEL	WITHIN THE NEXT FIVE-YEAR PERIOD, THE SCOPE OF WORK FOR THE JOB IS EXPECTED TO:			HAS A TEC-TRAINED PERSON EVER BEEN EMPLOYED TO FILL A JOB IN YOUR FIRM WITHIN THE CATEGORY?		
	Surplus	Sufficient	Shortage				Increase	Remain Constant	Decrease	YES	NO	DON'T KNOW
Telephone Central Office Craft Occupations												
Telephone Line Installers and Cable Splicers												
Automobile Body Repairers												
Automobile Mechanics												
Business Machine Mechanics												
Diesel Mechanics												
Dispensing Opticians and Optical Technicians												
Farm Equipment Mechanics												
Industrial Machinery Repairers												
Instrument Repairers												
Jewelers and Jewelry Repairers												

OCCUPATIONAL CATEGORIES	LOCAL SUPPLY OF TRAINED MANPOWER (check one)			NUMBER OF PERSONS CURRENTLY EMPLOYED IN OCCUPATIONAL CATEGORY WHO DO NOT HAVE MINIMUM CERTIFICATION OR EDUCATION NEEDED FOR THE JOB	ADDITIONAL FULL-TIME PERSONNEL NEEDED TO PROVIDE OPTIMUM CARE FOR PRESENT SERVICE LEVEL	APPROXIMATE NUMBER OF PERSONNEL NEEDED BY JULY 1985 FOR ANTICIPATED SERVICE LEVEL	WITHIN THE NEXT FIVE-YEAR PERIOD THE SCOPE OF WORK FOR THE JOB IS EXPECTED TO:			HAS A TEC-TRAINED PERSON EVER BEEN EMPLOYED TO FILL A JOB IN YOUR FIRM WITHIN THE CATEGORY?		
	Surplus	Sufficient	Shortage				Increase	Remain Constant	Decrease	YES	NO	DON'T KNOW
Maintenance Electricians												
Piano and Organ Tuners and Repairers												
Television and Radio Service Technicians												
Truck and Bus Mechanics												
Watch Repairers												
Health Occupations	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Dental Laboratory Technicians												
Medical Assistants												
Medical Laboratory Workers												
Operating Room Technicians												
Optometric Assistants												
Respiratory Therapists												

(12)

OCCUPATIONAL CATEGORIES	LOCAL SUPPLY OF TRAINED MANPOWER (check one)			NUMBER OF PERSONS CURRENTLY EMPLOYED IN OCCUPATIONAL CATEGORY WHO DO NOT HAVE MINIMUM CERTIFICATION OR EDUCATION NEEDED FOR THE JOB.	ADDITIONAL FULL-TIME PERSONNEL NEEDED TO PROVIDE OPTIMUM CARE FOR PRESENT SERVICE LEVEL	APPROXIMATE NUMBER OF PERSONNEL NEEDED BY JULY 1985 FOR ANTICIPATED SERVICE LEVEL	WITHIN THE NEXT FIVE-YEAR PERIOD THE SCOPE OF WORK FOR THE JOB IS EXPECTED TO:			HAS A TEC-TRAINED PERSON EVER BEEN EMPLOYED TO FILL A JOB IN YOUR FIRM WITHIN THE CATEGORY?		
	Surplus	Sufficient	Shortage				Increase	Remain Constant	Decrease	YES	NO	DON'T KNOW
Licensed Practical Nurses												
Occupational Therapy Assistants												
Art, Design, and Communications-Related Occupations	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Display workers												
Photographers												
Radio and Television Announcers												
OTHER:	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

(13)

OCCUPATIONAL CATEGORIES	LOCAL SUPPLY OF TRAINED MANPOWER (check one)			NUMBER OF PERSONS CURRENTLY EMPLOYED IN OCCUPATIONAL CATEGORY WHO DO NOT HAVE MINIMUM CERTIFICATION OR EDUCATION NEEDED FOR THE JOB	ADDITIONAL FULL-TIME PERSONNEL NEEDED TO PROVIDE OPTIMUM CARE FOR PRESENT SERVICE LEVEL	APPROXIMATE NUMBER OF PERSONNEL NEEDED BY JULY 1985 FOR ANTICIPATED SERVICE LEVEL	WITHIN THE NEXT FIVE-YEAR PERIOD THE SCOPE OF WORK FOR THE JOB IS EXPECTED TO:			HAS A TEC-TRAINED PERSON EVER BEEN EMPLOYED TO FILL A JOB IN YOUR FIRM WITHIN THE CATEGORY?		
	Surplus	Sufficient	Shortage				INCREASE	REMAIN CONSTANT	DECREASE	YES	NO	DON'T KNOW
OTHER:												

SELECTED OCCUPATIONS AND THEIR CHARACTERISTICS

- Air-conditioning, refrigeration, and heating mechanics (D.O.T. 637.281 and .381, 862.281 and .381, and 869.281). Educational Requirements: technical school or apprenticeship. Trends and Prospects: Rapid employment growth with most openings for air-conditioning and refrigeration mechanics. Rapid employment growth also of furnace installers and gas burner mechanics, while the number of oil burner mechanics should remain fairly stable. Average annual openings in the U.S. = 13,100. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works independently--requires initiative, self-discipline, and the ability to organize; and generally confined to work area--physically located at one work setting.

- Air traffic controllers (D.O.T. 193.168). Educational Requirements: High school or technical school. Trends and prospects: Expected increase in the number of airplanes should result in a rapid employment increase. Average annual openings in U.S. = 800. Job Characteristics: works with ideas--uses one's intellect to solve problems; works as part of a team--interacts with fellow employees in performing work; directs activities of others--work entails supervisory responsibilities; generally confined to work area--physically located at one work setting; overtime or shift work required--works hours other than normal daytime shifts; high level of responsibility--requires making key decisions involving property, finances, or human sagety and welfare; and works with details--works with technical data, numbers or written materials on a continuous basis.

- Aircraft mechanics (D.O.T. 621.281). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Very rapid employment growth as number of aircraft increases. Employment in the Federal Government, however, may fluctuate with changes in defense spending. Continued fuel shortages may adversely affect employment growth. Job Characteristics: works with things--job generally requires manual skills; works as part of a team--interacts with fellow employees in performing work; exposed to weather conditions--works outside or is subjected to temperature extremes; high level of responsibility--requires making key decisions involving property, finances, or human safety and welfare; and works with details--works with technical data, numbers, or written materials on a continuous basis.

- Automobile body repairer (D.O.T. 807.381). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Moderate employment growth because of the rising number of automobiles damageg in traffic accidents. Average annual openings in U.S. = 4,100. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--requires initiative, self-discipline, and the ability to organize; generally confined to work area--physically located at one work setting; and requires physical stamina--must be in physical condition for continued lifting, standing, and walking.

- Automobile mechanic (D.O.T. 620.131 through .381, .782, and .885; 721.281 and 825.281) Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Moderate employment increase as a result of more automobiles and added features that increase maintenance requirements, such as pollution control devices. Job Characteristics: works with things--job generally r-quires manual skills; able to see physical results of work--work produces a tangible product; works independently--requires initiative, self-discipline, and the ability to organize; generally confined to work area--physically located at one work setting; and requires physical stamina--must be in physical condition for continued lifting, standing, and walking.

- Automobile painters (D.O.T. 845.781). Educational Requirements: High school or technical school. Trends and Prospects: Moderate employment increase because of the growing number of automobiles damaged in traffic accidents. Average annual openings in U.S. = 800. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works independently--requires initiative, self-discipline, and the ability to organize; work is closely supervised--job performance and work standards controlled by supervisor; generally confined to work area--physically located at one work setting; and repetitious work--performs the same task on a contiruing basis.

- Bank clerks (D.O.T. 209.388, 210.388, 215.388, 217.388, 219.388 and .488). Educational Requirements: High school or technical school. Trends and Prospects: Rapid employment growth as new and existing banks expand their services. Best prospects for data processing workers in banking. Average annual openings in U.S. = 43,200. Job Characteristics: works as part of a team--interacts with fellow employees in performing work; work is closely

supervised--job performance and work standards controlled by supervisor; generally confined to work area--physically located at one work setting; works with details--works with technical data, numbers, or written materials on a continuous basis; and repetitious work--performs the same task on a continuing basis.

- Bank tellers (D.O.T. 212.368). Educational Requirements: High school or technical school. Trends and Prospects: Rapid employment growth as banks expand their services. Favorable opportunities for part-time work during peak business hours. Average annual openings in U.S. = 25,000. Job Characteristics: works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisors; generally confined in work area--physically located at one work setting; works with details--works with technical data, numbers, or written materials on a continuous basis; and repetitious work--performs the same task on a continuing basis.

- Barbers (D.O.T. 330.371). Educational Requirements: Technical school. Trends and Prospects: Little or no employment change with most openings resulting from deaths and retirements. Average annual opening in the U.S. = 5,000. Job Characteristics: helps people--assists people in a helping relationship; works with people--job generally requires a pleasing personality and ability to get along with others; able to see physical results of work--work produces a tangible product; generally confined to work area--physically located at one work setting; and repetitious work--performs the same task on a continuing basis.

- Blue-collar work supervisors (foremen). Educational Requirement: High school, technical college, or apprenticeship. Trends and Prospects: Moderate employment growth resulting from industrial expansion and the need for increased supervision as production processes become increasingly complex. Average annual openings in U.S. = 58,000. Job Characteristics: works with people--job generally requires a pleasing personality and ability to get along with others; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisor; directs activities of others--work entails supervisory responsibilities; overtime or shift work required--works hours other than normal daytime shifts; and high level of responsibility--requires making key decisions involving property, finances, or human safety and welfare.

- Bookkeeping workers (D.O.T. 219.368 through .588, 216.388 and 219.388 and .488). Educational Requirement: High school diploma or technical school. Trends and Prospects: Limited employment growth because of increasing automation of record keeping. Most job openings will result from deaths and retirements. Job Characteristics: works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisor; works independently--requires initiative, self-discipline, and the ability to organize; generally confined to work area--physically located at one work setting; works with details--works with technical data, numbers, or written materials on a continuous basis; and repetitious work--performs the same task on a continuing basis.

- Bricklayer and stonemasons (D.O.T. 861.381, .781, and .884). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Moderate growth in employment as result of increasing construction activity and growing use of ornamental brickwork. Job Characteristics: works with things--job requires manual skills; able to see physical results of work--work produces a tangible product; works as part of a team--interacts with fellow employees in performing work; exposed to weather conditions--works outside or is subjected to temperature extremes; and requires physical stamina--must be in physical condition for continued lifting, standing, and walking.

- Carpenters (D.O.T. 860.281 through .781). Educational Requirements: High school or technical school. Trends and Prospects: Moderate employment growth from increased construction and greater demand for carpenters in the maintenance departments of factories, stores, and large apartment and government buildings. Average annual openings in U.S. = 37,000. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works as part of a team--interacts with fellow employees in performing work; exposed to weather conditions--works outside or is subjected to temperature extremes; and requires physical stamina--must be in physical condition for continued lifting, standing, and walking.

- Cement masons (cement and concrete finishers) (D.O.T. 844.884 and 852.884) Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Very rapid growth in employment due to the anticipated growth in

job generally requires manual skills; able to see physical results of work--work produces a tangible product; works independently--requires initiative, self discipline, and the ability to organize; generally confined to work area--physically located at one work setting; and requires physical stamina--must be in physical conditions for continuous lifting, standing, and walking.

- Drafters (draftsmen) (D.O.T. 001.281, 002.281, 003.281, 005.281, 007.281, 010.281, 014.281, and 017). Educational Requirements: Technical school, plus; Employment Trends and Prospects: Skilled draftsmen, especially those with post-high school training, are expected to have favorable employment opportunities. The average annual number of openings in the U.S. = 17,900. Job Characteristics: works with ideas--uses one's intellect to solve problems; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards are controlled by supervisors; generally confined to work area--physically located at one work setting; and works with details--works with technical data, numbers, or written materials on a continuous basis.

- Electricians (construction) (D.O.T. 821.381, 824.281, and 829.281 and .381) Educational Requirements: Technical School. Trends and Prospects: Rapid employment increase as construction expands and more electrical outlets, switches, and wiring are needed for appliances, air-conditioning systems, electronic data processing equipment, and electrical control devices. Average annual openings in U.S. = 11,100. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works as part of a team--interacts with fellow employees in performing work; exposed to weather conditions--works outside or is subjected to temperature extremes; and requires physical stamina--must be in physical condition for continued lifting, standing, and walking.

- Electrocardiography technicians (D.O.T. 078.368). Educational Requirements: Technical school or junior college. Trends and Prospects: Very rapid employment growth is expected due to increased use of electrocardiographs in diagnosis and in routine physical checkups. Average annual openings in U.S.= 900. Job Characteristics: helps people--assists people in a helping relationship; works with people--job generally requires pleasing personality and the ability to get along with others; works as part of a team--interacts with fel low employees in performing work; work is closely supervised--job generally requires pleasing personality and ability to get along with others; works as part of a team--interacts with fellow employees in perorming work; work is closely supervised--job performance and work standards controlled by supervisor; works with details--works with technical data, numbers, or written materials on a continuous basis; and repetitious work--performs the same task on a continuing basis.

- Electroencephalograph technician (D.O.T. 078.368). Educational Requirements: Technical college or junior college. Trends and Prospects: A very rapid increase in employment is expected as electroencephalographs become widely used to diagnose brain diseases and monitor patients with brain disorders and those undergoing surgery. Job Characteristics: helps people--assists people in a helping relationship; works with people--job generally requires pleasing personality and ability to get along with others; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisor; works with details--works with technical data, numbers, or written materials on a continuous basis; and repetitious work--performs the same task on a continuing basis.

- Electroplaters (D.O.T. 500.380 and .781 through .886). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Moderate employment increase because of expanding use of electroplating and the growth of the metalworking industries. Average annual openings in U.S. = 900. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works independently--requires initiative, self-discipline, and the ability to organize and repetitious work--performs the same task on a continuing basis.

- Electrotypers and stereotypers (D.O.T. 974.381 and 975.782). Educational Requirements: Technical school or apprenticeship. Employment Trends and Prospects: Slow employment decline resulting from greater use of lithographic (offset) printing and other labor-saving techniques. Some openings will result from retirements and deaths. Average annual openings in U.S. = 100. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisor; generally confined to work area--physically located at one work setting

construction and the increasing use of concrete and concrete products. Average annual opening in U.S. = 4,100. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works as part of a team--intercats with fellow employees in performing work; directs activities of others--work entails supervisory responsibilities; overtime or shift work required--works hours other than normal daytime shifts; exposed to weather conditions--works outside or is subjected to temperature extremes; and requires physical stamina--must be in physical condition for continued lifting, standing, and walking.

- Composition room workers (printing) (D.O.T. 650.582, 654.782, and 973.381). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Slowely declining employment due to more efficient typesetting equipment. A few thousand openings are expected yearly to replace workers who retire or die. Average annual openings in U.S. = 4,300. Job Characteristics: works with things--job generally requires manual skills; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisor; generally confined to work area--works hours other than normal daytime shifts; works with details--works with technical data, numbers, or written materials on a continuous basis; and repetitious work--performs the same task on a continuing basis.

- Computer operating personnel (D.O.T. 213.138, .382, .582, .588, and .885, and 223.387). Educational Requirements: Technical school. Employment Trends and Prospects: Rapid rise in employment of console and auxiliary equipment operators as the number of computer installations increases. Declining demand for keypunch operators because of improved methods of data entry. Annual average number of openings in U. S.= 27,000. Job Characteristics: works with things--job generally requires manual skills; works as part of a team--interacts with fellow employees in performing duties; work is closely supervised--job performance and work standards controlled by supervisor; works with details--works with technical data, numbers, or written materials on a continuous basis; and repetitious work--performs the same task on a continuing basis.

- Computer programmers (D.O.T. 020.188). Educational Requirements: Technical school. Trends and Prospects: Rapid employment growth as computers are increasingly used in business and government operations. Best opportunities for persons qualified in both programming and systems analysis. Average annual openings in U.S. = 13,000. Job Characteristics: works with ideas--uses one's intellect to solve problems; works as part of a team--interacts with fellow employees in performing work; directs activities of others--work entails supervisory responsibilities; generally confined to work area--physically located at one work setting; and works with details--works with technical data, numbers, or written materials on a continuous basis.

- Cooks and chefs (D.O.T. 313.131 through .877; 314.381 through .878; and 315.131 through .381). Educational Requirements: Technical school. Trends and prospects: Moderate growth in employment. Most starting jobs will be in small restaurants and othr eating places where food preparation is fairly simple. Average annual openings in U.S. = 52,000. Job Characteristics: works with things--job generally requires manual skills; helps people--assists people in helping relationships; works as part of a team--interacts with fellow employees in performing work; directs activities of others--work entails supervisory responsibilities; and overtime or shift work required--works hours other than normal daytime shifts.

- Cosmetologists (D.O.T. 332.271 and .381; 331.878 and 339.371). Educational Requirements: Technical School. Trends and Prospects: Very good job opportunities for experienced works and newcomers. Good prospects also for those seeking part-time work. Job Characteristics: help people--assists people in a helping relationship; works with people--job generally requires pleasing personality and ability to get along with others; able to see physical results of work--work produces a tangible product; and generally confined to work area--physically located at one work setting.

- Dental laboratory technician (D.O.T. 712.381). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Very good employment prospects for experienced technicians. Very favorable opportunities for recent graduates of approved training programs, also. Average annual openings in U.S. = 2,000.

- Diesel mechanics (D.O.T. 625.281). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Rapid employment increase due to the expansion of industries that are major users of diesel engineers. Average annual openings in the U.S. = 4,5000. Job Characteristics: works with things-

skills; able to see physical results of work--work produces a tangible product; works independently--requires initiative, self-discipline, and the ability to organize; generally confined to work area--physically located at one work setting; and repetitious work--performs the same task on a continuing basis.

- Glaziers (D.O.T. 865.781). Educational Requirements: High school or technical school. Employment Trends and Prospects: very rapid employment increase as more glass is used in new buildings. Average annual openings in U.S. = 700.

- Industrial machinery repairer (D.O.T. 626-631). Educational Requirements: Technical school, voctational school, or apprenticeship. Trends and Prospects: Rapid employment increase because of the growing amount of factory machinery needing maintenance and repair. Average annual openings in the U.S. = 44,000. Job Characteristics: works with things--job generally requires manual skills; works independently--requires initiative, self-discipline, and the ability to organize; overtime or shift work required--works hours other than normal daytime shifts; requires physical stamina--must be in physical condition for continual lifting, standing, and walking; and works with details--works with technical data, numbers, or written materials on a continuous basis.

- Instrument makers (mechanical) (D.O.T. 600.280). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Moderate employment growth due to the growing use of instruments in manufacturing processes and in research and development work. Average annual openings in U.S. = 200. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisor; and works with details--works with technical data, numbers, or written materials on a continuous basis.

- Insurance agents and brokers (D.O.T. 250.258). Educational Requirements: High school or junior college. Trends and Prospects: Moderate employment growth. Despirte an expected increase in sales volume, selling is expected to remain keenly competitive. Average annual openings in U.S. = 16,000. Job Characteristics: helps people--assists people in a helping relationship; works with people--job generally requires pleasing personality and ability to get along with others; works independently--requires initiative, self-discipline, and the ability to organize; overtime or shift work required--works hours other than normal daytime shifts; works with details--works with technical data, numbers, or written materials on a continuous basis; motivates others--must be able to influence others; and competitive--competes with other people on the job for recognition and advancement.

- Interior designer (D.O.T. 142.051). Educational Requirements: Technical school, vocational school, or four-year college). Trends and Prospects: Competition for beginning jobs. But job prospects for talented art school or college graduates majoring in interior design are good. Those without talent or formal training are likely to face keen competition. Job Characteristics: works with ideas--uses one's intellect to solve problems; able to see physical results of work--work produces a tangible product; opportunity for self-expression--fre-dom to use one's own ideas; works independently--requires initiative, self-discipline, and the ability to organize; directs activities of others--work entails supervisory responsibilities; and works with details--works with technical data, numbers, or written material on a continuous basis.

- Lathers (D.O.T. 842.781). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Rapid employment growth because of rising construction activity, increasing use of new kinds of plasters, and improved methods of applying plaster. Average annual openings in U.S. = 1,100. Job Characteristics: works with things--job generally requires manual skills; works as part of a team--interacts with fellow employees in performing work; and requires physical stamina--must be in physical condition for continued lifting, standing, and walking.

- Library technicians and assistants (D.O.T. 249.368). Educational Requirements: Technical school or junior college. Trends and Prospects: Good employment prospects particularly for graduates of academic programs. Especially favorable opportunities in large public and college and university libraries. Job Characteristics: helps people--assists people in a helping relationship; works as part of a team--interacts with fellow employees in performing work; overtime or shift work required--works hours other than normal daytime shifts; works with details--works with technical data, numbers, or written materials on a continuous basis.

- Licensed practical nurse (D.O.T. 079.378). Educational Requirements: Technical school, vocational school, or apprenticeship. Trends and Prospects: Very

overtime or shift work required--works hours other than normal daytime shifts; works with details--works with technical data, numbers, or written materials on a continuing basis; and repetitious work--performs the same task on a continuing basis.

- Engineering and science technicians (includes mechanical technology, chemical technology, industrial production technology, hydrologic technology, and biological technology) (D.O.T. 002 through 029). Educational Requirements: Technical school, plus. Trends and Prospects: Favora ble employment opportunities, especially for graduates of postsecondary training programs. Rapid growth will result from industrial expansion and increasing opportunities in the field of atomic energy, environmental control, and urban development. Average annual openings in U.S. = 39,600. Job Characteristics: works with things--job generally requires manual skills; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisor; and works with details --works with technical data, numbers, or written materials on a continuing basis.

- File clerks (D.O.T. 132.388, 205.368, 206.388, 219.588, 920.887). Educational Requirements: High school or technical school. Trends and Prospects: Increased demand for adequate record keeping result in many job openings. Limited growth due to the increasing use of computers to store and retrieve data. Average annual openings in the U.S. = 22,800. Job Characteristics: works with ideas--uses one's intellect to solve problems; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisor; and works with details--works wi-h technical data, numbers, or written materials on a continuous basis.

- Floor covering installers (D.O.T. 299.381 and 864.781). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Rapid employment increase due to more widespread use of resilient floor coverings and carpeting. Average annual openings in U.S. = 3,200. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work procuces a tangible product; works independently--requires initiative, self-discipline, and the ability to organize; and requires physical stamina--must be in physical condition for continued lifting, standing, and walking.

- Floral designers (D.O.T. 143.081). Educational R equirements: Technical school or apprenticeship. Trends and Prospects: Very rapid employment increase due to rising demand for floral arrangements. Average annual openings in U.S. = 2,500. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangile product; opportunity for self-expression--freedom to use one's own ideas; works independently--requires initiative, self-discipline, and the ability to organize; and generally confined to work area--physically located at one work setting.

- Food processing technicians (food technologist) (D.O.T. 022.081, 040.081, and 041.081). Educational Requirements: Technical school, plus. Trends and Prospects: Favorable employment opportunities especially for those with post-high school training in food technology. The demand for convenience foods and the requirements for higher quality and safety standards in food procedures will require more technicians. Average annual openings in U.S. = 200. Job Characteristics: works with things--job generally requires manual skills; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisor; and works with details--works with technical data, numbers, or written materials on a continuous basis.

- Funeral directors and embalmers (D.O.T. 187.168 and 338,381). Educational Requirements: Technical school. Trends and Prospects: Little or no change in employment is expected. Prospects are nevertheless good, as replacement needs will create many openings. Average annual openings in U.S. = 1.300. Job Characteristics: helps people--assists people in a helping relationship; works with people--job generally requires pleasing personality and ability to get along with others; works independently--requires initiative, self-discipline, and the ability to organize; directs acitivities of wothers--work entails supervisory responsibilities; and overtime or shift work required--works hours other than normal daytime shifts.

- Furniture upholsterers (D.O.T. 780.381) Educational Requirement: Technical or vocational school; apprenticeship. Trends and Prospects: Slow employment growth because of the use of durable fabrics and the trend toward buying instead of reupholstering the old furniture. Average annual openings in U.S. = 1,400. Job Characteristics: works with things--job generally requires manual

good opportunities as health facilities continue to sexpand and as practical nurses are increasingly utilized to lighten the loads of registered nurses. Average annual openings in the U.S. = 70,000. Job Characteristics: helps people--assists people in a helping relationship; works with people--job generally requires a pleasing personality and ability to get along with others; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisors; works with details--works with technical data, numbers, or written materials on a continuous basis.

- Lithographic workers (D.O.T. 972.382, 972.281, 971.281, 972.781, and 651.782). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Very rapid employment increase as a result of the greater use of lithographic (offset) printing. Job Characteristics: works with things--job generally requires manual skills; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisor; generally confined to work area--physically located at one work setting; overtime or shift work required--works hours other than normal daytime shifts; works with details--works with technical data, numbers, or written materials on a continuous basis; and repetitious work--performs the same task on a continuing basis.

- Machinists, all-around (D.O.T. 600.280, .281, and .381). Educational Requirements: Technical school, vocational school, or apprenticeship. Trends and Prospects: Moderate employment growth due to rising demand for machine goods such as automobiles, household appliances, and industrial products. Average annual openings in U.S. = 13,100. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works independently--requires initiative, self-discipline, and the ability to organize; generally confined to work area--physically located at one work setting; requires physical stamina--must be in physical condition for continued lifting, standing, and walking; works with details--works with technical data, numbers, or written materials on a continuous basis; repetitious work--performs the same task on a continuing basis.

- Maintenance electrician (D.O.T. 825.281 and 829.281). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Moderate employment increase due to the growing amount of electrical and electronic equipment in industry. Average annual openings in U.S. = 9,800. Job Characteristics: works with things--job generally requires manual skills and works independently--requires initiative, self-discipline, and the ability to organize.

- Meatcutter (D.O.T. 316.781, 316.884). Educational Requirements: Technical school vocational school, or apprenticeship. Trends and Prospects: Although total employment is expected to show little or no change, thousands of openings will become available from deaths and retirements. Average annual openings in U.S. = 4,400. Job Characteristics: works with things--job generally requires manual skills; works independently--requires initiative, self-discipline, and the ability to organize; generally confined to work area--physically located at one work setting; requires physical stamina--must be in physical condition for continued lifting, standing, and walking; and repetitious work--performs the same task on a continuing basis.

- Medical assistants (D.O.T. 079.368). Educational Requirements: Technical or junior college. Trends and Prospects: Excellent employment opportunities due to the very rapid grow in the number of physicians, the principal employers of medical assistant s. Graduates of two-year colleges will be especilly in demand. Average annual openings = 25,000. Job Characteristics: helps people--assists people in a helping relationship; works with people--job generally requires pleasing personality and ability to get along with others; able to see physical results of work--work produces a tangible product; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisor; overtime or shift work required--works hours other than normal daytime shifts; and works with details--works with technical data, numbers, or written materils on a continuous basis.

- Medical laboratory workers (D.O.T. 078.128, .168, .281, and .381). Educational Requirements: Technical school, plus. Trends and Prospects: Moderate employment expansion as a result of wide use of laboratory services by physicians. Job Characteristics: works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisor; overtime or shift work required--works hours other than normal daytime shifts; high level of responsibility--requires making key decisions involving property, finances, or human safety and welfare; and works with details--works with technical data, numbers, or written materials on a continuous basis.

- Medical record technicians and clerks (D.O.T. 249.388). Educational Requirements: Technical school, plus. Trends and Prospects: Very good employment prospects for medical record clerks. Favorable outlook for medical record technicians with an associate degree. Technicians with less education may face competition by 1985. Job Characteristics: works with things--job generally requires manual skills; works independently--requires initiative, self-discipline, and the ability to organize; works with details--works with technical data, numbers, or written materials on a continuous basis; and repetitious work--performs the same task on a continuing basis.

- Millwrights (D.O.T. 638.281). Educational Requirements: Apprenticeship or technical school. Trends and Prsopects: Moderate employment increase due to industrial expansion and the growing complexity of manufactured goods. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisor; requires physical stamina--must be in physical condition for continued lifting, standing, and walking; and works with details--works with technical data, numbers, or written materials on a continuing basis.

- Motion picture projectionists (D.O.T. 960.382). Educational Requirements: Technical school, vocational school, or apprenticeship). Trends and Prospects: Slow employment growth. Most openings will occur as workers retire, or transfer to other fields of work. Job Characteristics: works with things--job generally requires manual skills; works independently--requires initiative, self-discipline, and the ability to organize; generally confined to work area--physically located at one work setting; overtime or shift work required--works hours other than normal daytime shifts; and repetitious work--performs the same taks on a continuing basis.

- Occupational therapy assistants (D.O.T. 079.368). Educational Requirements: High school, vocational school, or technical school. Trends and Prospects: Very good employment outlook for graduates of approved occupational therapy assistant programs. Anticipated very rapid growth in the occupation also should create many openings for those receiving on-the-job training. Average annual openings in the U.S. = 1,200. Job Characteristics: helps people--assists people in a helping relationship; works with people--job generally requires pleasing personality and ability to get along with others; able to see physical results ow work--work produces a tangible product; works as part of a team--interacts with fellow employees in performing work; and work is closely supervised--job performance and work standards controlled by supervisor.

- Operating engineers (construction machinery operators) (D.O.T. 850.782 through .887, 851.883, 853.782 and .883, 859.782 and 859.883). Educational requirements: High school, technical school, vocational school, or apprenticeship). Trends and prospects: Rapid employment increase as more bull dozers, cranes, and other heavy machines are used in construction work. Average annual openings in U.S. = 18,500. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works independently--requires initiative, self-discipline, and the ability to organize; exposed to weather conditions--works outside or is subjected to temperature extremes; high level of responsibility--requires making key decisions involving property, financees, or human safety and welfare; and requires physical stamina--must be in physical condition for continued lifting, standing, and walking.

- Operating room technicians (medical) (D.O.T. 079.378). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Excellent employment opportunities as operating room technicians increasingly assume more or routine tasks formerly performed by nurses in the operating room. Job Characteristics: works with ideas--uses one's intellect to solve problems; helps people--assists people in a helping relationship; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisor; and works with details--works with technical data, numbers, or written materials on a continuous basis.

- Painters and paperhangers (D.O.T. 840.381, .781 and .844, and 841.781). Educational Requirements: Technical school or apprenticeship. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works independently--requires initiative, self-discipline, and the ability to organize; and requires physical stamina--must be in physical condition for continued lifting, standing, and walking.

- Photographic laboratory workers (D.O.T. 970.281, 976.381, .687 and .887). Educational Requirements: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works

independently--requires initiative, self-discipline, and the ability to organize; generally confined to work area--physically located at one work setting; and works with details--works with technical data, numbers, or written materials on a continuous basis.

- Physical therapy assistants and aids (D.O.T. 355.878). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: The expected very rapid growt h in the field should result in excellent employment opportunities for both assistants and aides. Average annual openings in U.S. = 2,000. Job Characteristics: helps people--assists people in a helping relationship; works with people--job generally requires pleasing personality and abi: ty to get along with others; able to see physical results of work--work produces a tangible product; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisors; overtime or shift work required--works hours other than normal daytime shifts; and works with details--works with technical data, numbers, or written materials on a continuous basis.

- Plumbers and Pipefitters (D.O.T. 862.381). Educational Requirements: Apprenticeship or technical school. Trends and Prospects: Moderate employment increase due to rising construction activity and growth of industries which use extensive pipework in their processing activities, such as chemical and petroleum refining. Also, the trends toward more bathrooms per home and more central air-conditioning will result in increased demand for these workers. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works independently--requires initiative, self-discipline, and the ability to organize; and requires physical stamina--must be in physical condition for continued lifting, standing, and walking.

- Police officers (D.O.T. 375.118 through .868 and 377.868). Educational Requirements: High school diploma or junior college. Trends and Prospects: Increasing demand for protective services should create very good employment opportunities; specialized training will become increasingly important. Job Characteristics: helps people--assists people in a helping relationship; works with people--job generally requires pleasing personality and ability to get along with o thers; also works independen tly at times--requires initiative, self-discipline, and the ability to organize; work is closely supervised--job performance and work standards controlled by supervisor; overtime or shift work required--works hours other than normal daytime shifts; exposed to weather conditions--works outside or is subjected to temperature extremes; high level of responsibility--requires making key decisions involving property, finances, or human safety and welfare; requires physical stamina--must be in physical condition for continued lifting, standing, and walking; and works with technical data, numbers, or written materials on a continuous basis.

- Radio and television announcers (D.O.T. 159.148). Educational Requirements: High school or technical school. Trends and Prospects: Moderate employment increase. Opportunities are likely to be better in radio than in televsions. Young people will face stiff competition because of the large number of persons interest-d in this type of work. Average annual openings in U.S.=500. Job Characteristics: works with ideas--uses one's intellect to solve problems; works independently--requires initiative, self-discipline, and the ability to organize; generally confined to work area--physically located at one work setting; overtime or shift work required--works hours other than normal daytime shift; motivates others--must be able to influence others; and competitive --competes with other people on the job for recognition and advancement.

- Radiologic (X-ray) technician/assistant (D.O.T. 078.168 and .368). Educational Requirements: Technical school or junior college. Trends and Prospects: Favorable outlook for both full- and part-time workersdue to expansion in the use of X-ray equipment and the growing demand for medical services in general. Average annual openings for registered technicians in U.S. = 6,500. Job Characteristics: works with things--job generally requires manual skills; helps people--assists people in a helping relationship; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisor; overtime or shift work required--works hours other than normal daytime shifts; high level of responsibility--requires making key decisions involving human safety and welfare; and works with details--works with technical data, numbers, or written materials on a continuous basis.

- Real estate salespersons and brokers (D.O.T. 250.358) Educational Requirements: High school or technical school. Trends and Prospects: Moderate employment increase to result from the growing demand for home purchases and rentals. Mature workers, including those transferring from other kinds of saleswork, are likely to find many job opportunities. Job Characteristics: helps people-assists people in a helping relationship; works with people--job generally requires pleasing personality and ability to get along with others; works

independently--requires initiative, self-discipline, and the ability to organize; overtime or shift work required--works hours other than normal daytime shifts; h igh level of responsibility--requires making key decisions involving property, finances, or human safety and welfare; works with details--works with technical data, numbers, or wr itten materials on a continuous basis; motivates others--must be able to influence others; and competetive--competes with other people on the job for recognition and advancement.

- Respiratory therapy workers (D.O.T. 079.368). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: very good opportunity for well-qualified respiratory therapists in this rapidly growing new field. Average annual openings in U.S. = 2,000. Job Characteristics: helps people--assists people in a helping relationship; works with people--job generally requires pleasing personality and ability to get along with others; works as part of a team--interacts with fellow employees in performing work; work is closely supervised--job performance and work standards controlled by supervisors; overtime or shift work required--works hours other than normal daytime shifts; and works with details--works with technical data, numbers, or written materials on a continuous basis.

- Roofers (D.O.T. 804.281, 843.844, and 866.381). Educational Requirements: Technical school, vocational school, or apprenticeship. Trends and Prospects: Rapid employment increase due to the rise in construction activity. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works independently--requires ini tiative, self-discipline, and the ability to organize; exposed to weather conditions--works outside or is subjected to temperature extremes; and requires physical stamina--must be in physical condition for continued lifting, standing, and walking.

- Secretaries and stenographers (D.O.T. 201.268 and .368; 202.388 and 209.138). Educational Requirements: High school or technical school. Trends and Prospects: The increasing use of dictating machines will limit opportunities for office stenographers. Excellent prospects for secretaries and shorthand reporters. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works independently--requires initiative, self-discipline, and the ability to organize; work is closely supervised--job performance and work standards controlled by supervisor; generally confined to work area--physically located at one work setting; works with details--works with technical data, numbers, or written materials on a continuous basis; and repetitious work--performs the same task on a continuing basis.

- Set-up workers (machine tools) (D.O.T. 600.380). Educational Requirements: High school or technical school. Trends and Prospects: Rapid employment growth due to increasing consumer and industrial demand for machined goods. Average annual openings in U.S. = 2,200. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works independently--requires initiative, self-discipline, and the ability to organize; generally confined to work area--physically located at one work setting; requires physical stamina--must be in physical condition for continued lifting, standing, and walking; and works with details--works with technical data, numbers, or written materials on a continuous basis.

- Sheet-metal workers (D.O.T. 804.281 and .884). Educational Requirements: High school or technical school. Trends and Prospects: Moderate employment rise as more workers are needed to install air-conditioning and heating ducts and other sheet-metal products in new houses, stores, offices, and other buildings. Average annual openings in U.S. = 2,300. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work provides a tangile product; works as part of a team--interacts with fellow employees in performing work; generally confined to work area--physically located at one work setting; requires physical stamina--must be in physical condition for continued lifting, standing, and walking.

- Stationary engineers (D.O.T. 950.782). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Relatively stable employment because large boilers and automatic controls make possible increased capacity without corresponding increases in employment. However, there will be a few thousand openings yearly from deaths and retirements. Average annual openings in the U.S. = 4,600. Job Characteristics: works independently--requires initiative, self-discipline, and the ability to organize; overtime or shift work required--works hours other than normal daytime shifts; and works with details--works with technical data, numbers, or written materials on a continuous basis.

- Surveyor (technician) (D.O.T. 081.188). Educational Requirements: Technical school, junior college, or apprenticeship. Trends and Prospects: Good employment opportunities especially for those with post high-school training, because of increased development of land for public, commercial, and residential use. Average annual openings in U.S. = 27,000. Job Characteristics: works with ideas--uses one's intellect to solve problems; works with part of a team--interacts with fellow employees in performing work; directs activities of others--work entails supervisory responsibilities; works with details--works with technical data, numbers or written materials on a continuous basis; and exposed to weather conditions--works outside or is subjected to temperature extremes.

- Television and radio service technicians (D.O.T. 720.281). Educational Requirements: Technical school, vocational school, or apprenticeship. Trends and Prospects: Moderate employment growth is anticipated because of the growing number of radios, televisions, phonographs, and other home entertainment products. Average annual openings in U.S. = 4,400. Job Characteristics: works with things--job generally requires manual skills; helps people--assists people in a helping relationship; able to see physical results of work--work produces a tangible product; works independently--requires initiative, self-discipline, and the ability to organize; and works with details--works with technical data, numbers, or written materials on a continuous basis.

- Tool-and-die makers (D.O.T. 601.280, .281, and .381). Educational Requirements: Technical school or apprenticeship). Trends and Prospects: Slow employment growth. Most openings will occur as workers retire, die, or transfer to other fields of work. Average annual openings in U.S. = 4,200. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works independently--requires initiative, self-discipline, and the ability to organize; generally confined to work area--physically located at one work setting; overtime or shift work required--works hours other than normal daytime shifts; works with details--works with technical data, numbers, or written materials on a continuous basis; and repetitious work--performs the same task on a continuing basis.

- Truck mechanics and bus mechanics (D.O.T. 620.281). Educational Requirements: Technical school or apprenticeship. Trends and Prospects: Rapid employment increase of truck mechanics, while the number of bus mechanics is not expected to change significantly. In both occupations, many openings will arise from deaths and retirements. Average annual openings in U.S. = 5,100. Job Characteristics: works with things--job generally requires manual skills; works independently--requires initiative, self-discipline, and the ability to organize; and requires physical stamina--must be in physical condition for continued lifting, standing, and walking.

- Veterinary assistants (technologists) (D.O.T. 073.108). Educational Requirements: Technical school. Trends and Prospects: Employment opportunities for veterinary assistants are likely to correspond to favorable outlook for veterinarians through mid-1980s. Growth in the pet population, an increase in the number of livestock and poultry needed to feed an expanding population, an increase in veterinary research, emphasis on scientific methods of raising and breeding livestock and popultry, and the growth in public health and disease control programs will all contribute to the demand for veter inary assistants. Job Characteristics: works with animals--job generally requires pleasing personality and an admiration of animals; works as part of a team--interacts with fellow employees in performing duties; work is closely supervised--job performance and work standards controlled by supervisor; overtime or shift work required--works hours other than normal daytime shifts; and works with details--works with technical data, numbers, and written materials on a continuous basis.

- Welders and flamecutters (D.O.T. 810 through 819.887). Educational Requirements Apprenticeship or technical school. Trends and Prospects: Rapid employment increase due to growth of metal working industries and wider use of welding. Average annual openings in U.S. = 27,200. Job Characteristics: works with things--job generally requires manual skills; able to see physical results of work--work produces a tangible product; works independently--requires initiative, self-discipline, and the ability to organize; generally confined to work area--physically located at one work setting; and requires physical stamina--must be in physical condition for continued lifting, standing, and walking.

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